STEREO POWER AMPLIFIER/GRAPHIC EQUALIZER

B-E9

SERVICE MANUAL

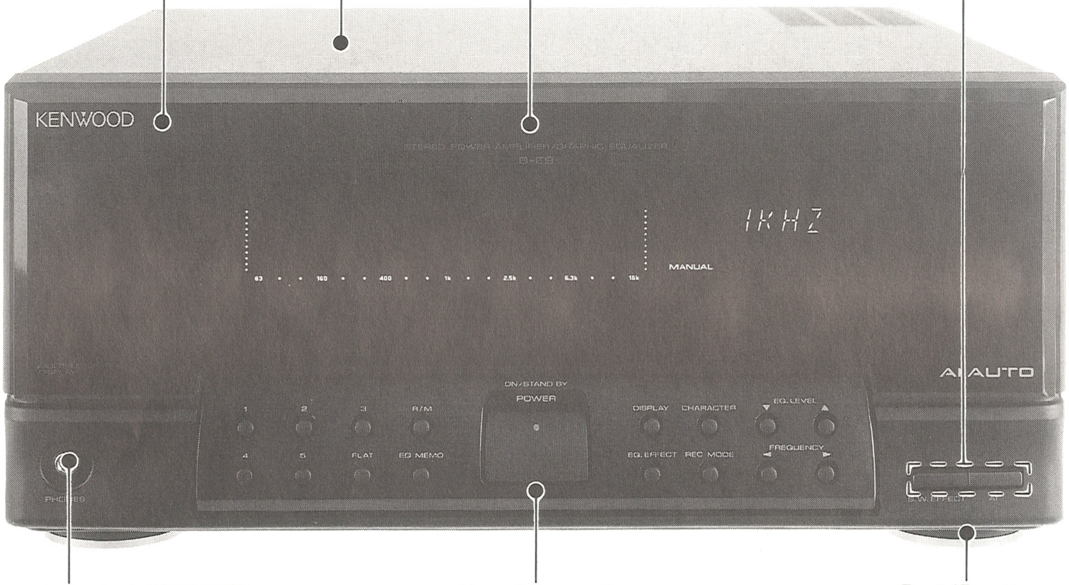
(UD-952)

KENWOOD

© 1994-6 PRINTED IN KOREA

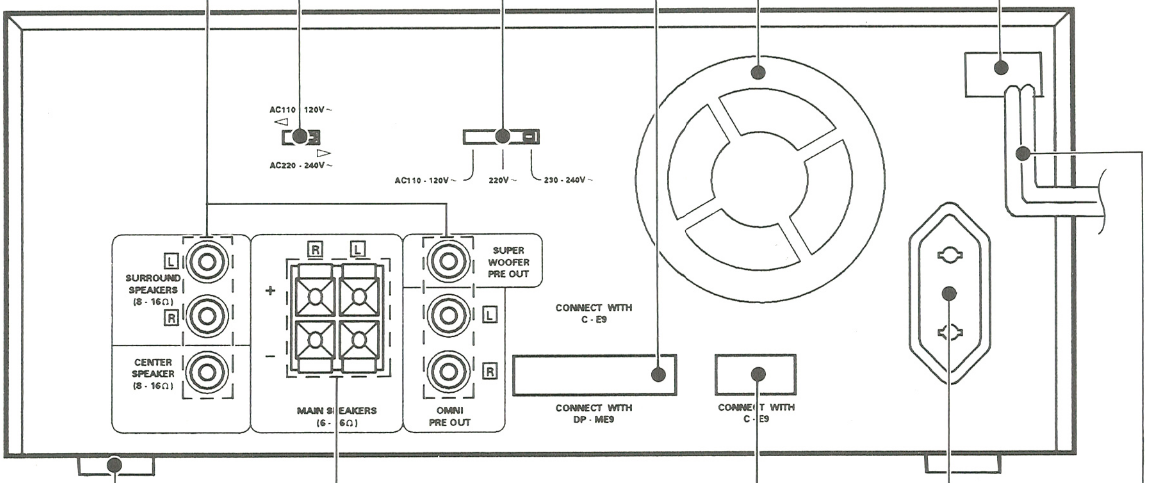
B51-4903-00(K)3924

Panel ass'y (A60-0583-12)
Metallic cabinet (A01-3134-01)
Front glass (B10-2025-03)
Knob (SW EFFECT/AI) (K29-5934-03)


KENWOOD
STEREO POWER AMPLIFIER/GRAPHIC EQUALIZER
B-E9
1KHZ
63
160
400
1k
2.5k
6.3k
16k
MANUAL
AI AUTO
ON/STAND BY
POWER
1
2
3
R/M
4
5
FLAT
EQ MEMO
DISPLAY
CHARACTER
EQ.LEVEL
EQ.EFFECT
REC MODE
FREQUENCY
PHONES

Miniature phone jack (PHONES) (E11-0218-05)
Dressing panel (A21-1858-03)
Foot (Front) (J02-1095-04)

Rectangular receptacle (19P) (E58-0006-05)
Phono jack (3P) (PRE OUT) (E63-0018-15)
Slide switch* (S62-0001-05)
Slide switch* (S31-2322-05)
Motor ass'y (T49-0024-12)
Power cord bushing (J42-0083-05)


AC110 120V~
AC220 - 240V~
AC110 - 120V~
220V~
230 - 240V~
SURROUND SPEAKERS (8 - 16Ω)
L
R
CENTER SPEAKER (8 - 16Ω)
R
L
+
–
MAIN SPEAKERS (6 - 16Ω)
SUPER WOOFER PRE OUT
OMNI PRE OUT
L
R
CONNECT WITH C - E9
CONNECT WITH DP - ME9
CONNECT WITH C - E9

Foot (Rear) (J02-0366-15)
Lock terminal board (SPEAKERS) (E70-0045-05)
Rectangular receptacle (5P) (E58-0008-05)
AC outlet* (E03-)
AC power cord* (E30-)

***Refer to parts list on page 22.**

CONTENTS/ACCESSORIES

CONTENTS

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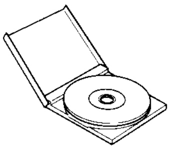
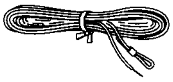
SPECIFICATIONS .... BACK COVER

ACCESSORIES

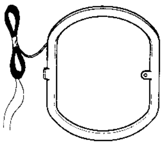
- Sound enhancement CD 1
  (W01-0861-05)



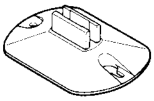
- FM indoor antenna 1
  (T90-0182-15)



- AM loop antenna ass'y .. 1
  (T90-0195-05)



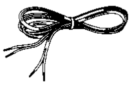
Loop antenna stand
(J19-3645-05)



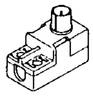
- Parallel cord (19P) 1
  (E30-2738-05)

- Parallel cord (5P) 1
  (E30-2772-05)

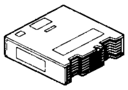
- Speaker cords 2
  (E30-5168-05 : **M,T,X,P,E**)
  (E30-5172-05 : **K**)



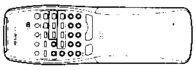
- Antenna adaptor 1
  (T90-0198-05)
  For U.K. and Europe.



- Magazine 1
  (J19-3394-13)

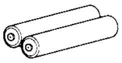


- Remote control unit 1
  (X94-1050-61 : RC-E9)

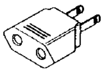


Battery cover
(F07-0721-33)

- Batteries (R03/AAA) 2
  (–)

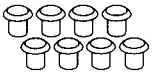


- AC plug adaptor 1
  (E03-0115-05)



Except for some areas
For the unit with a European AC plug in areas other than Europe.

- Caps 8
  (B09-0171-04)

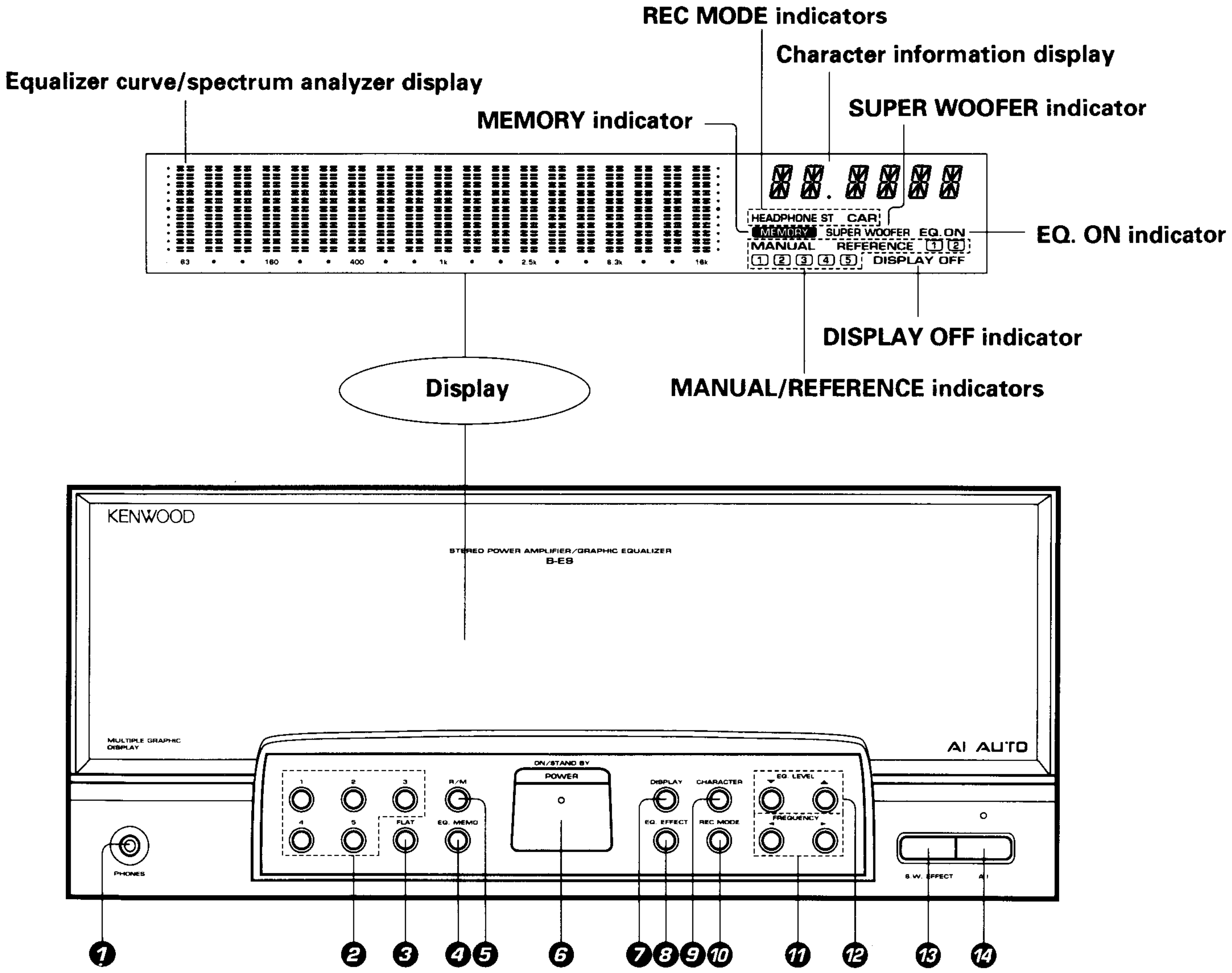


To be used when installing the optional OMNI-A5. Omni speakers onto the front speakers.

*Speaker cords are packed with the Speakers.

System name	**Power amp/GE**	Pre-amp/Tuner	Cassette deck	CD player	System carton box (Parts No.)	Speaker (Other package)
UD-952	**B-E9**	C-E9	X-E9	DP-ME9	H60-0266-04	LS-E9

CONTROL


REC MODE indicators
Character information display
Equalizer curve/spectrum analyzer display
SUPER WOOFER indicator
MEMORY indicator
EQ. ON indicator
HEADPHONE ST CAR
MEMORY SUPER WOOFER EQ.ON
MANUAL REFERENCE 1 2
1 2 3 4 5 DISPLAY OFF
63 160 400 1k 2.5k 6.3k 16k
DISPLAY OFF indicator
MANUAL/REFERENCE indicators
Display
KENWOOD
STEREO POWER AMPLIFIER/GRAPHIC EQUALIZER
B-E9
MULTIPLE GRAPHIC DISPLAY
AI AUTO
ON/STAND BY
POWER
R/M
FLAT
EQ. MEMO
DISPLAY
CHARACTER
EQ. EFFECT
REC MODE
EQ. LEVEL
FREQUENCY
PHONES
S.W. EFFECT
AI
❶
❷
❸
❹
❺
❻
❼
❽
❾
❿
⓫
⓬
⓭
⓮

❶ **PHONES jack**

❷ **Preset keys (1 to 5)**

❸ **FLAT key**
Press to make the equalizer curve flat.

❹ **EQ.MEMO key**
Press to store an equalizer pattern in memory.

❺ **R/M key**
Press to switch the equalizer curves to be recalled between Reference and Manual curves.

❻ **POWER key**
Press to turn the power ON/OFF.

❼ **DISPLAY key**
Each press changes the display contents in order from graphic equalizer to spectrum analyzer, demonstration and display OFF.

❽ **EQ.EFFECT key**
Press to switch the equalizer effect ON/OFF.

❾ **CHARACTER key**
Each press changes over the spectrum analyzer display modes.

❿ **REC MODE key**
Press when recording a tape to be played on a car stereo or headphone stereo.

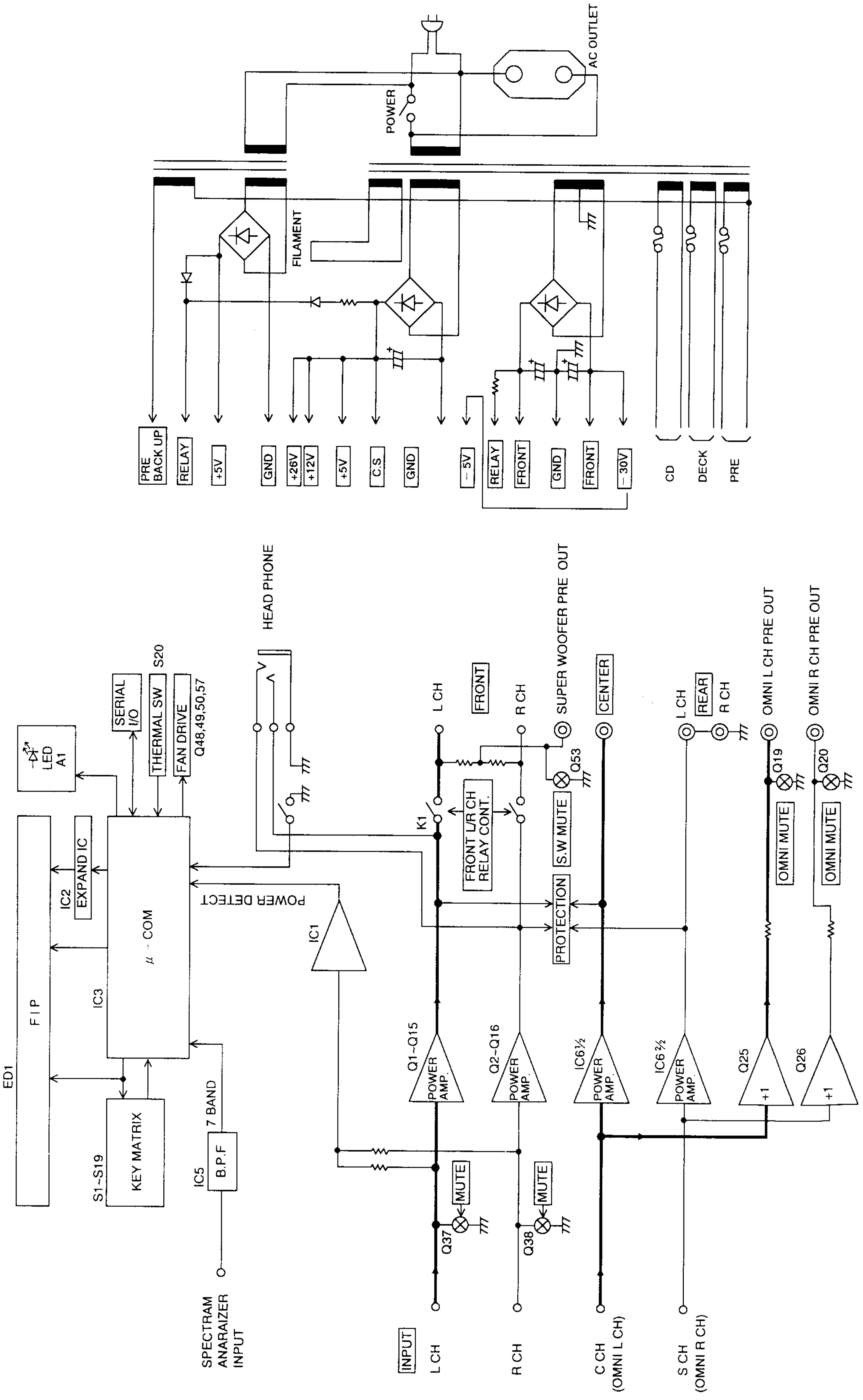
⓫ **FREQUENCY (◄, ►) keys**
Press to select the frequencies to be adjusted.

⓬ **EQ.LEVEL (▼, ▲) key**
Press to adjust the equalizer curve level.

⓭ **S.W.EFFECT key**
Press to switch the effect of the super woofer (optical) ON/OFF.

⓮ **AI key**
Press to set the suitable equalizer curve for each CD automati-

BLOCK DIAGRAM


AC OUTLET
POWER
FILAMENT
PRE BACK UP
RELAY
+5V
GND
+26V
+12V
+5V
C.S
GND
– 5V
RELAY
FRONT
GND
FRONT
– 30V
CD
DECK
PRE
HEAD PHONE
SUPER WOOFER PRE OUT
OMNI L CH PRE OUT
OMNI R CH PRE OUT
SERIAL I/O
THERMAL SW
S20
FAN DRIVE
Q48,49,50,57
LED
A1
IC2
EXPAND IC
μ - COM
IC3
F I P
ED1
KEY MATRIX
S1~S19
IC5
B.P.F
7 BAND
POWER DETECT
IC1
L CH
FRONT
R CH
K1
FRONT L/R CH RELAY CONT.
S.W MUTE
Q53
CENTER
PROTECTION
L CH
REAR
R CH
Q19
Q20
OMNI MUTE
OMNI MUTE
Q1~Q15
POWER AMP.
Q2~Q16
POWER AMP.
IC6½
POWER AMP.
IC6 2/2
POWER AMP.
Q25
+1
Q26
+1
MUTE
Q37
MUTE
Q38
SPECTRAM ANARAIZER INPUT
INPUT
L CH
R CH
C CH (OMNI L CH)
S CH (OMNI R CH)

CIRCUIT DESCRIPTION

1.Test mode

1-1 Test Mode with the main unit keys

(1)Setting procedure

While pressing the FLAT key, plug the AC power cord to the power outlet.

(2)Cancellation

Unplug the AC power cord. The initial setting will take effect and the test mode will be canceled.

(3)Description

1. Auto POWER ON

- When AC power cord is plugged while pressing the FLAT key, the POWER will turn ON and all function will be at the initial setting.

2. ALL LED ON mode

- When the AC power cord is plugged while pressing the FLAT key, all the LEDs will turn ON and all function will return the LEDs to normal.

3. Function with the main unit keys

a) Relay

- Each time EQ.MEMO key is pressed, changes the status as follows.
  FRONT RELAY ON↔FRONT RELAY OFF
  FRONT SPEAKER status is displayed on 14 seg. for 5 seconds.
  F_ON↔F_OFF
- Each time R/M key is pressed, changes the status as follows.
  C/S RELAY ON↔C/S RELAY OFF
  C/S SPEAKER status is displayed on 14 seg. for 5 seconds.
  CS_ON↔CS_OFF
- While SPEAKER ON/OFF switching, MUTE is ineffective.

b) Fan

- Each time CHARACTER key is pressed, changes the status in cycles 1→2→3→4. Initial status is 4, and starting from status 1 by pressing the key once. THERMO (μ-com 15 pin) and FAN.LEVEL (μ-com 4 pin) 's status are ignored.

1. FAN OFF→ON (LOW revolution)
   FAN.$\overline{\text{ON}}$/OFF (μ-com 19 pin) : H→L (LOW)
   FAN.SPEED (μ-com 18 pin) : H→H (HIGH)
   FAN.STOP (μ-com 24 pin) : L→L (LOW)
   14 seg. display (5 sec.) : LSPEED
2. FAN ON→ON (HIGH revolution)
   FAN.$\overline{\text{ON}}$/OFF (μ-com 19 pin) : L→L (LOW)
   FAN.SPEED (μ-com 18 pin) : H→L (LOW)
   FAN.STOP (μ-com 24 pin) : L→L (LOW)
   14 seg. display (5 sec.) : HSPEED
3. FAN ON→OFF (Fun stop)
   FAN.$\overline{\text{ON}}$/OFF (μ-com 19 pin) : L→H (HIGH)
   FAN.SPEED (μ-com 18 pin) : L→H (HIGH)
   FAN.STOP (μ-com 24 pin) : L→H (HIGH)
   14 seg. display (5 sec.) : STOP
4. FAN OFF (No revolution)
   FAN.$\overline{\text{ON}}$/OFF (μ-com 19 pin) : H→H (HIGH)
   FAN.SPEED (μ-com 18 pin) : H→H (HIGH)
   FAN.STOP (μ-com 24 pin) : H→L (HIGH)
   14 seg. display (5 sec.) : Normal display

- Each time AI key is pressed, display changes as follows.
  1. Normal display→THERMO(μ-com15pin) status
     14.seg. display : HTHRMO (HIGH)
     : LTHRMO (LOW)
  2. THERMO(μ-com15pin) status→Normal display
     14 seg. display : Last display

c) Graphic equalizer

Key name	Description
EQ DISPLAY	Switching FL display; Equalizer display, Reverse spectrum analyzer, Naiagaramode
1	All frequency=CENTER
2	All frequency=MAX
3	All frequency=MIN

1-2 Test mode with serial communications

(1)Setting procedure

- Enter the TEST ON code.(C3FFH)

(2)Cancellation

- Enter the TEST OFF code (C3FEH) or unplug the AC power cord.
- TEST ON setting is retained though TEST OFF code is entered.

(3)Description

- The following functions become ineffective during the test mode.
  Keys of the main unit, keys of the remote controller, ordinary serial codes.
- Codes received during the serial test mode are effective irrespective of the display mode.
- The MUTE function does not work during the serial test mode.
- The operation of the MUTE function is checked with a specific code.
- When the codes are received, the same codes are transmitted.
- All the LEDs will turn ON. ALL LED ON is cacelled by inputting the cancelling code and returned the LEDs to normal.
- The internal status will be initialized (test mode included).

(4)For FAN control

Initial status is 4.

1. Input FAN SPEED LOW (0C23DH)
   FAN.$\overline{\text{ON}}$/OFF (μ-com 19 pin) : L (LOW)
   FAN.SPEED (μ-com 18 pin) : H (HIGH)
   FAN.STOP (μ-com 24 pin) : L (LOW)
   14 seg. display (5 sec.) : LSPEED

CIRCUIT DESCRIPTION

2. Input FAN SPEED HIGH (0C23EH)
   FAN.$\overline{\text{ON}}$/OFF (μ-com 19 pin) : L (LOW)
   FAN.SPEED (μ-com 18 pin) : L (LOW)
   FAN.STOP (μ-com 24 pin) : L (LOW)
   14 seg. display (5 sec.) : HSPEED
3. Input FAN STOP HIGH (0C24EH)
   FAN.$\overline{\text{ON}}$/OFF (μ-com 19 pin) : H (HIGH)
   FAN.SPEED (μ-com 18 pin) : H (HIGH)
   FAN.STOP (μ-com 24 pin) : H (HIGH)
   14 seg. display (5 sec.) : STOP
4. Input FAN STOP LOW (0C24DH)
   FAN.$\overline{\text{ON}}$/OFF (μ-com 19 pin) : H (HIGH)
   FAN.SPEED (μ-com 18 pin) : H (HIGH)
   FAN.STOP (μ-com 24 pin) : L (LOW)
   14 seg. display (5 sec.) : Normal display

2.Initial setting

- When AC power cord is plugged while pressing the EQ MEMORY key, equipment is initialized.

2-1 Initial status and Back-up status

	Function	Status	Back-up
	POWER	OFF	YES
	DISPLAY	SPEANA	YES
	SW. EFFECT	OFF	YES
GE	EQ. EFFECT	OFF	YES
	EQ. LEVEL ∨ ∧	CENTER	YES
	FREQUENCY < >	1 kHz	YES
	FLAT	FLAT	YES
	R/M (REF 1, REF 2, MANUAL)	MANUAL	YES
	REC MODE	OFF	YES
	PRESET	––	YES
	AI	OFF	YES

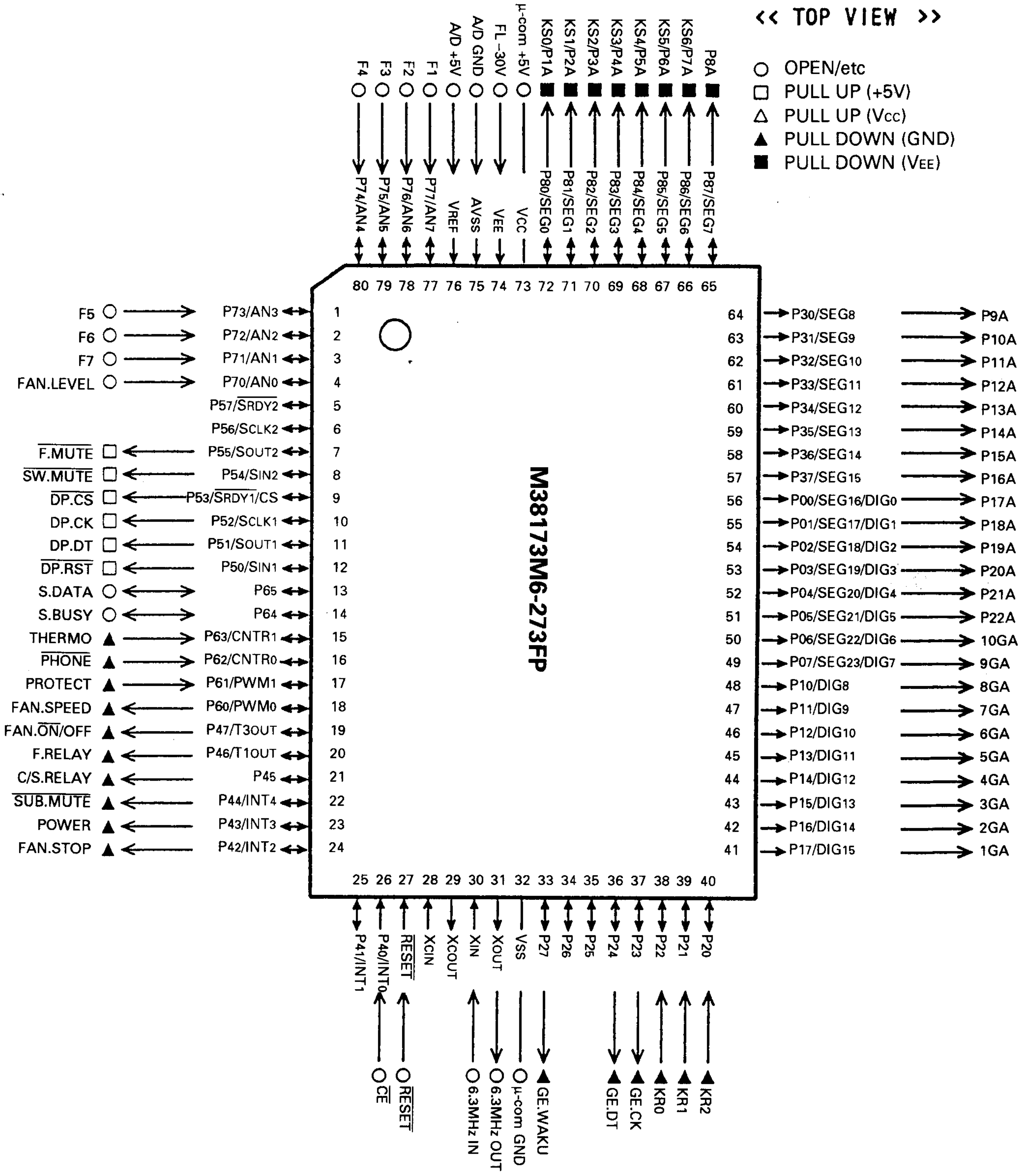
3.Serial test using serial code Jig (KSJ-0816)

Name	Data	Operation
POWER OFF	C380	Turns the power OFF.
POWER ON	C381	Turns the power ON.
EQ OFF	C384	Turns the graphic equalizer OFF.
EQ ON	C385	Turns the graphic equalizer ON.
M1 (ALL MID)	C386	Sets the boost cut of all frequencies to center.
M2 (ALL MAX)	C387	Sets the boost cut of all frequencies to maximum.. .
M3 (ALL MIN)	C388	Sets the boost cut of all frequencies to minimum.
ALL LED ON mode OFF	C3FB	ALL LED ON mode is canceled.
ALL LED ON mode ON	C3FC	ALL LEDs turns ON.
GE INITIAL	C3FD	Cleared all data and equipment is initialized.
TEST OFF	C3FE	Turns the serial test mode OFF.
TEST ON	C3FF	Turns the serial test mode ON.
FRONT MUTE ON	C30E	Turns the front mute ON.
SUB MUTE ON	C34B	Turns the sub (OMNI) mute ON.
MUTE ALL OFF	C311	Turns the all mute OFF.
SUPER WOOFER OFF	C21C	Turns the super woofer OFF.
SUPER WOOFER ON	C21D	Turns the super woofer ON.
SPEAKER OFF	C21E	Turns the speaker relay OFF.
FRONT SPEAKER ON	C21F	Turns the front speaker relay ON.
CENTER/REAR SPEAKER ON	C221	Turns the center and rear speaker relay ON.
FAN SPEED LOW	C23D	Sets each status. FAN.$\overline{\text{ON}}$/OFF (μ-com 19pin):LOW, FAN.SPEED (μ-com 18pin):HIGH, FAN.STOP (μ-com 24pin):LOW, LSPEED is displayed.
FAN SPEED HIGH	C23E	Sets each status. FAN.$\overline{\text{ON}}$/OFF (μ-com 19pin):LOW, FAN.SPEED (μ-com 18pin):LOW, FAN.STOP (μ-com 24pin):LOW, HSPEED is displayed.
FAN STOP LOW	C24D	Sets each status. FAN.$\overline{\text{ON}}$/OFF (μ-com 19pin):HIGH, FAN.SPEED (μ-com 18pin):HIGH, FAN.STOP (μ-com 24pin):LOW, Last display mode is displayed.
FAN STOP HIGH	C24E	Sets each status. FAN.$\overline{\text{ON}}$/OFF (μ-com 19pin):HIGH, FAN.SPEED (μ-com 18pin):HIGH, FAN.STOP (μ-com 24pin):HIGH, STOP is displayed.

CIRCUIT DESCRIPTION

4.Microprocessor M38173M6-273FP (X07:IC3)

4-1 Pin layout


<< TOP VIEW >>
○ OPEN/etc
□ PULL UP (+5V)
△ PULL UP (Vcc)
▲ PULL DOWN (GND)
■ PULL DOWN (VEE)
M38173M6-273FP
F4 80 P74/AN4
F3 79 P75/AN5
F2 78 P76/AN6
F1 77 P77/AN7
A/D +5V 76 VREF
A/D GND 75 AVss
FL -30V 74 VEE
μ-com +5V 73 VCC
KS0/P1A 72 P80/SEG0
KS1/P2A 71 P81/SEG1
KS2/P3A 70 P82/SEG2
KS3/P4A 69 P83/SEG3
KS4/P5A 68 P84/SEG4
KS5/P6A 67 P85/SEG5
KS6/P7A 66 P86/SEG6
P8A 65 P87/SEG7
F5 1 P73/AN3
F6 2 P72/AN2
F7 3 P71/AN1
FAN.LEVEL 4 P70/AN0
5 P57/SRDY2
6 P56/SCLK2
F.MUTE 7 P55/SOUT2
SW.MUTE 8 P54/SIN2
DP.CS 9 P53/SRDY1/CS
DP.CK 10 P52/SCLK1
DP.DT 11 P51/SOUT1
DP.RST 12 P50/SIN1
S.DATA 13 P65
S.BUSY 14 P64
THERMO 15 P63/CNTR1
PHONE 16 P62/CNTR0
PROTECT 17 P61/PWM1
FAN.SPEED 18 P60/PWM0
FAN.ON/OFF 19 P47/T3OUT
F.RELAY 20 P46/T1OUT
C/S.RELAY 21 P45
SUB.MUTE 22 P44/INT4
POWER 23 P43/INT3
FAN.STOP 24 P42/INT2
25 P41/INT1
CE 26 P40/INT0
RESET 27 RESET
28 XCIN
29 XCOUT
6.3MHz IN 30 XIN
6.3MHz OUT 31 XOUT
μ-com GND 32 VSS
GE.WAKU 33 P27
34 P26
35 P25
GE.DT 36 P24
GE.CK 37 P23
KR0 38 P22
KR1 39 P21
KR2 40 P20
64 P30/SEG8 P9A
63 P31/SEG9 P10A
62 P32/SEG10 P11A
61 P33/SEG11 P12A
60 P34/SEG12 P13A
59 P35/SEG13 P14A
58 P36/SEG14 P15A
57 P37/SEG15 P16A
56 P00/SEG16/DIG0 P17A
55 P01/SEG17/DIG1 P18A
54 P02/SEG18/DIG2 P19A
53 P03/SEG19/DIG3 P20A
52 P04/SEG20/DIG4 P21A
51 P05/SEG21/DIG5 P22A
50 P06/SEG22/DIG6 10GA
49 P07/SEG23/DIG7 9GA
48 P10/DIG8 8GA
47 P11/DIG9 7GA
46 P12/DIG10 6GA
45 P13/DIG11 5GA
44 P14/DIG12 4GA
43 P15/DIG13 3GA
42 P16/DIG14 2GA
41 P17/DIG15 1GA

CIRCUIT DESCRIPTION

4-2 Pin description

Pin No.	Pin Name	Name	I/O	Description
1	$\mathrm{P7_3/AN_3}$	F5	A/D	F5(2.5kHz) Spectrum analyzer input
2	$\mathrm{P7_2/AN_2}$	F6	A/D	F6(6.3kHz) Spectrum analyzer input
3	$\mathrm{P7_1/AN_1}$	F7	A/D	F7(16kHz) Spectrum analyzer input
4	$\mathrm{P7_0/AN_0}$	FAN.LEVEL	A/D	FAN control input
5	$\mathrm{P5_7}/\overline{\mathrm{S_{RDY2}}}$	NC	O	Unused
6	$\mathrm{P5_6/S_{CLK2}}$	NC	O	Unused
7	$\mathrm{P5_5/S_{OUT2}}$	$\overline{\mathrm{F.\ MUTE}}$	O	Front mute H:OFF L:ON
8	$\mathrm{P5_4/S_{IN2}}$	$\overline{\mathrm{SW.\ MUTE}}$	O	Super woofer mute H:OFF L:ON
9	$\mathrm{P5_3}/\overline{\mathrm{S_{RDY1}}}\mathrm{/CS}$	$\overline{\mathrm{DP.CS}}$	O	Communicatioh CHIP to expander IC(CXP2201AS/41pin)
10	$\mathrm{P5_2/S_{CLK1}}$	DP.CK	O	Communication CLOCK to expander IC(CXP2201AS/40pin)
11	$\mathrm{P5_1/S_{OUT1}}$	DP.DT	O	Communication DATA to expander IC(CXP2201AS/39pin)
12	$\mathrm{P5_0/S_{IN1}}$	$\overline{\mathrm{DP.RST}}$	O	Communication RESET to expander IC(CXP2201AS/42pin)
13	$\mathrm{P6_5}$	S.DATA	I/O	Serial communication to other equipment
14	$\mathrm{P6_4}$	S.BUSY	I/O	Serial communication to other equipment
15	$\mathrm{P6_3/CNTR_1}$	THERMO	I	Thermo switch detection H:Detected L:Not detected
16	$\mathrm{P6_2/CNTR_0}$	$\overline{\mathrm{PHONE}}$	I	Head phone detection H:H.P. No L:H.P. Yes
17	$\mathrm{P6_1/PWM_1}$	PROTECT	I	Protection detection H:Detected L:Not detected
18	$\mathrm{P6_0/PWM_0}$	FAN.SPEED	O	Fan speed switching H:Low speed L:High speed
19	$\mathrm{P4_7/T3_{OUT}}$	$\mathrm{FAN.}\overline{\mathrm{ON}}\mathrm{/OFF}$	O	Fan ON/OFF H:OFF L:ON
20	$\mathrm{P4_6/T1_{OUT}}$	F.RELAY	O	Front speaker relay control H:ON L:OFF
21	$\mathrm{P4_5}$	C/S.RELAY	O	Center/Rear speaker relay control H:ON L:OFF
22	$\mathrm{P4_4/INT_4}$	$\overline{\mathrm{SUB.MUTE}}$	O	Sub (OMNI) mute H:OFF L:ON
23	$\mathrm{P4_3/INT_3}$	POWER	O	Power relay H:POWER ON L:POWER OFF
24	$\mathrm{P4_2/INT_2}$	FAN.STOP	O	Fan stop control H:ON L:OFF
25	$\mathrm{P4_1/INT_1}$	NC	O	Unused
26	$\mathrm{P4_0/INT_0}$	$\overline{\mathrm{CE}}$	I	Enable H→L:Back-up IN
27	$\overline{\mathrm{RESET}}$	$\overline{\mathrm{RESET}}$	I	Reset H:Non reset L:Reset
28	$\mathrm{X_{CIN}}$	$\mathrm{X_{CIN}}$	--	Unused
29	$\mathrm{X_{COUT}}$	$\mathrm{X_{COUT}}$	--	Unused
30	$\mathrm{X_{IN}}$	$\mathrm{X_{IN}}$	--	Oscillator input (6.3MHz)
31	$\mathrm{X_{OUT}}$	$\mathrm{X_{OUT}}$	--	Oscillator output (6.3MHz)
32	$\mathrm{V_{SS}}$	$\mathrm{V_{SS}}$	--	GND
33	$\mathrm{P2_7}$	GE.WAKU	O	GE flame display H:Yes L:No
34	$\mathrm{P2_6}$	NC	O	Unused
35	$\mathrm{P2_5}$	NC	O	Unused
36	$\mathrm{P2_4}$	GE.DT	O	Control DATA for GE IC (STK301-090/11 pin)
37	$\mathrm{P2_3}$	GE.CK	O	Control CLOCK for GE IC (STK301-090/10 pin)
38	$\mathrm{P2_2}$	KR0	I	Key return
39	$\mathrm{P2_1}$	KR1	I	Key return
40	$\mathrm{P2_0}$	KR2	I	Key return
41	$\mathrm{P1_7/DIG_{15}}$	1GA	O	Grid terminal of fluorescent character display tube
42	$\mathrm{P1_6/DIG_{14}}$	2GA	O	Grid terminal of fluorescent character display tube

CIRCUIT DESCRIPTION

Pin description

Pin No.	Pin Name	Name	I/O	Description
43	P1$_5$/DIG$_{13}$	3GA	O	Grid terminal of fluorescent character display tube
44	P1$_4$/DIG$_{12}$	4GA	O	Grid terminal of fluorescent character display tube
45	P1$_3$/DIG$_{11}$	5GA	O	Grid terminal of fluorescent character display tube
46	P1$_2$/DIG$_{10}$	6GA	O	Grid terminal of fluorescent character display tube
47	P1$_1$/DIG$_9$	7GA	O	Grid terminal of fluorescent character display tube
48	P1$_0$/DIG$_8$	8GA	O	Grid terminal of fluorescent character display tube
49	P0$_7$/SEG$_{23}$/DIG7	9GA	O	Grid terminal of fluorescent character display tube
50	P0$_6$/SEG$_{22}$/DIG6	10GA	O	Grid terminal of fluorescent character display tube
51	P0$_5$/SEG$_{21}$/DIG5	P22A	O	Segment terminal of fluorescent character display tube
52	P0$_4$/SEG$_{20}$/DIG4	P21A	O	Segment terminal of fluorescent character display tube
53	P0$_3$/SEG$_{19}$/DIG3	P20A	O	Segment terminal of fluorescent character display tube
54	P0$_2$/SEG$_{18}$/DIG2	P19A	O	Segment terminal of fluorescent character display tube
55	P0$_1$/SEG$_{17}$/DIG1	P18A	O	Segment terminal of fluorescent character display tube
56	P0$_0$/SEG$_{16}$/DIG0	P17A	O	Segment terminal of fluorescent character display tube
57	P3$_7$/SEG$_{15}$	P16A	O	Segment terminal of fluorescent character display tube
58	P3$_6$/SEG$_{14}$	P15A	O	Segment terminal of fluorescent character display tube
59	P3$_5$/SEG$_{13}$	P14A	O	Segment terminal of fluorescent character display tube
60	P3$_4$/SEG$_{12}$	P13A	O	Segment terminal of fluorescent character display tube
61	P3$_3$/SEG$_{11}$	P12A	O	Segment terminal of fluorescent character display tube
62	P3$_2$/SEG$_{10}$	P11A	O	Segment terminal of fluorescent character display tube
63	P3$_1$/SEG$_9$	P10A	O	Segment terminal of fluorescent character display tube
64	P3$_0$/SEG$_8$	P9A	O	Segment terminal of fluorescent character display tube
65	P8$_7$/SEG$_7$	P8A	O	Segment terminal of fluorescent character display tube
66	P8$_6$/SEG$_6$	P7A/KS6	O	Segment terminal of fluorescent character display tube Key scan 6
67	P8$_5$/SEG$_5$	P6A/KS5	O	Segment terminal of fluorescent character display tube Key scan 5
68	P8$_4$/SEG$_4$	P5A/KS4	O	Segment terminal of fluorescent character display tube Key scan 4
69	P8$_3$/SEG$_3$	P4A/KS3	O	Segment terminal of fluorescent character display tube Key scan 3
70	P8$_2$/SEG$_2$	P3A/KS2	O	Segment terminal of fluorescent character display tube Key scan 2
71	P8$_1$/SEG$_1$	P2A/KS1	O	Segment terminal of fluorescent character display tube Key scan 1
72	P8$_0$/SEG$_0$	P1A/KS0	O	Segment terminal of fluorescent character display tube Key scan 0
73	V$_{CC}$	V$_{CC}$	– –	+5V power supply
74	V$_{EE}$	V$_{EE}$	– –	-30V power supply
75	AV$_{SS}$	AV$_{SS}$	– –	A/D reference GND
76	V$_{REF}$	V$_{REF}$	– –	A/D reference power supply (+5V)
77	P7$_7$/AN$_7$	F1	A/D	F1 (63Hz) Spectrum analyzer input
78	P7$_6$/AN$_6$	F2	A/D	F2 (160Hz) Spectrum analyzer input
79	P7$_5$/AN$_5$	F3	A/D	F3 (400Hz) Spectrum analyzer input
80	P7$_4$/AN$_4$	F4	A/D	F4 (1kHz) Spectrum analyzer input

5.Notes for Fan control

1. Thermostat

When THERMO ON is detected (μ-com 15 pin=H), protection timer for 3 minutes is turned ON. When THERMO turns OFF, protection timer is stopped. If THERMO is ON for 3 minutes, equipment will be protection status.

2. Protection

If protection signal is H (μ-com 17 pin), or THERMO is ON for 3 minutes, equipment will be protection status.
All mute=ON, All speaker relay=OFF
POWER LED=blinking, FL=all goes off, Fan=stop
Protection is canceled when POWER is turned ON/OFF. (main unit keys / remote controller keys / serial communication).
When power relay turns ON and 4 seconds later, protection is detected again.

3. Priority of Fan control

Check : Thermo status (THERMO/ 15 pin)
→Level status (FAN.LEVEL/ 4 pin)
Control : Fan ON (FAN.$\overline{\text{ON}}$/OFF/ 19 pin)
→Fan speed (FAN.SPEED/18 pin)
→Fan stop (FAN.STOP/ 24 pin)

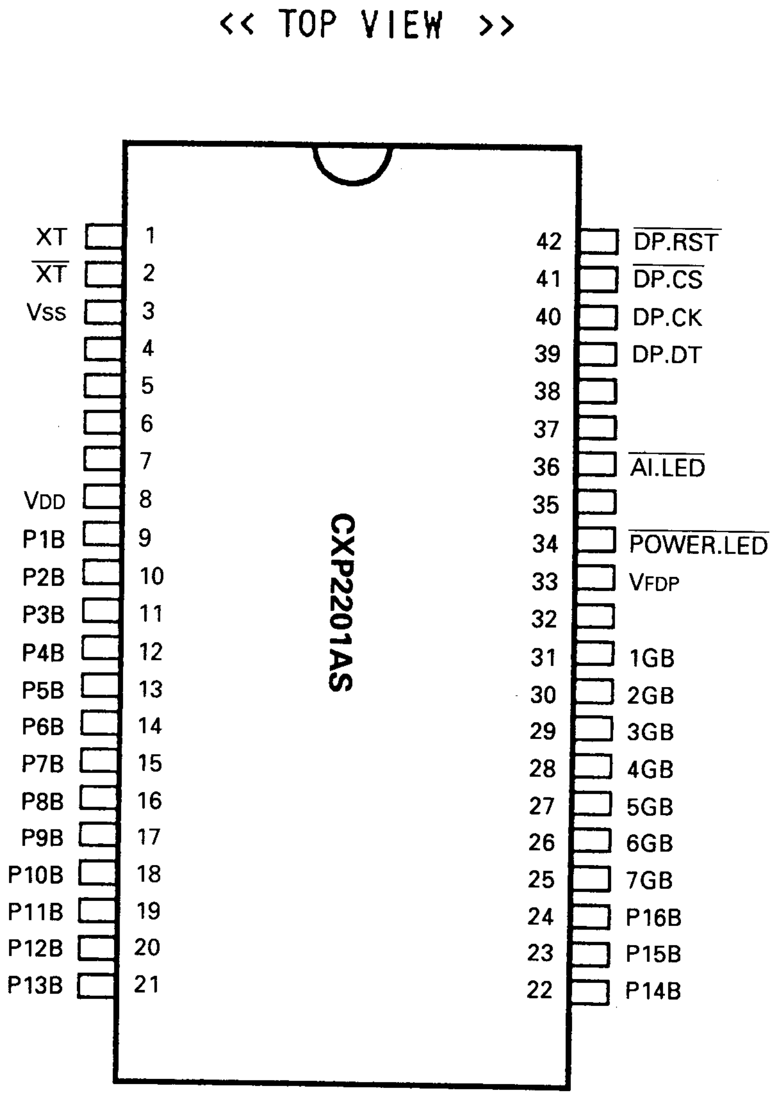
6.Key matrix

	KS0 (72p)	KS1 (71p)	KS2 (70p)	KS3 (69p)	KS4 (68p)	KS5 (67p)	KS6 (66p)
KR0 (38p)	SW.EFFECT	AI	FREQ. ≻	FREQ. ≺	EQ.LEVEL ⋏	EQ.LEVEL ⋎	
KR1 (39p)	REC MODE	EQ.EFFECT	POWER	EQ.MEMO	CHARACTER	DISPLY	
KR2 (40p)	5	4	1	2	FLAT	3	R/M

CIRCUIT DESCRIPTION

7.FL driver CXP2201AS (X07:IC2)

7-1 Pin layout


<< TOP VIEW >>
CXP2201AS
XT 1
$\overline{XT}$ 2
Vss 3
4
5
6
7
VDD 8
P1B 9
P2B 10
P3B 11
P4B 12
P5B 13
P6B 14
P7B 15
P8B 16
P9B 17
P10B 18
P11B 19
P12B 20
P13B 21
42 $\overline{DP.RST}$
41 $\overline{DP.CS}$
40 DP.CK
39 DP.DT
38
37
36 $\overline{AI.LED}$
35
34 $\overline{POWER.LED}$
33 VFDP
32
31 1GB
30 2GB
29 3GB
28 4GB
27 5GB
26 6GB
25 7GB
24 P16B
23 P15B
22 P14B

CIRCUIT DESCRIPTION

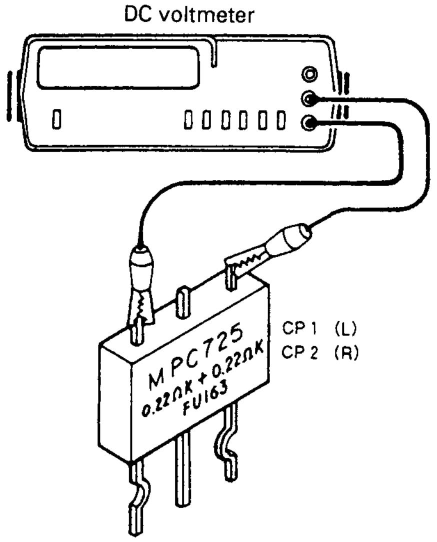
7-2 Pin description

Pin No.	Name	I/O	Description
1	XT	--	Crystal oscillator input (4.19 MHz)
2	$\overline{XT}$	--	Crystal oscillator output (4.19 MHz)
3	V_{SS}	--	GND
4	NC	I	Unused
5	NC	I	Unused
6	NC	I	Unused
7	NC	I	Unused
8	V_{DD}	--	+5V power supply
9	S1B	O	Segment terminal of fluorescent character display tube
10	S2B	O	Segment terminal of fluorescent character display tube
11	S3B	O	Segment terminal of fluorescent character display tube
12	S4B	O	Segment terminal of fluorescent character display tube
13	S5B	O	Segment terminal of fluorescent character display tube
14	S6B	O	Segment terminal of fluorescent character display tube
15	S7B	O	Segment terminal of fluorescent character display tube
16	S8B	O	Segment terminal of fluorescent character display tube
17	S9B	O	Segment terminal of fluorescent character display tube
18	S10B	O	Segment terminal of fluorescent character display tube
19	S11B	O	Segment terminal of fluorescent character display tube
20	S12B	O	Segment terminal of fluorescent character display tube
21	S13B	O	Segment terminal of fluorescent character display tube
22	S14B	O	Segment terminal of fluorescent character display tube
23	S15B	O	Segment terminal of fluorescent character display tube
24	S16B	O	Segment terminal of fluorescent character display tube
25	7GB	O	Grid terminal of fluorescent character display tube
26	6GB	O	Grid terminal of fluorescent character display tube
27	5GB	O	Grid terminal of fluorescent character display tube
28	4GB	O	Grid terminal of fluorescent character display tube
29	3GB	O	Grid terminal of fluorescent character display tube
30	2GB	O	Grid terminal of fluorescent character display tube
31	1GB	O	Grid terminal of fluorescent character display tube
32	T0	--	Unused
33	V_{FDP}	--	-30V power supply
34	$\overline{\text{POWER.LED}}$	O	POWER LED H:LED OFF L:LED ON
35	NC	O	Unused
36	$\overline{\text{AI.LED}}$	O	AI LED H:LED OFF L:LED ON
37	NC	O	Unused
38	NC	O	Unused
39	DP.DT	I	Communication DATA to µ-com (M38173M6-273FP/11 pin)
40	DP.CK	I	Communication CLOCK to µ-com (M38173M6-273FP/10 pin)
41	$\overline{\text{DP.CS}}$	I	Communication CHIP SELECT to µ-com (M38173M6-273FP/9 pin)
42	$\overline{\text{DP.RST}}$	I	Communication RESET to µ-com (M38173M6-273FP/12 pin)

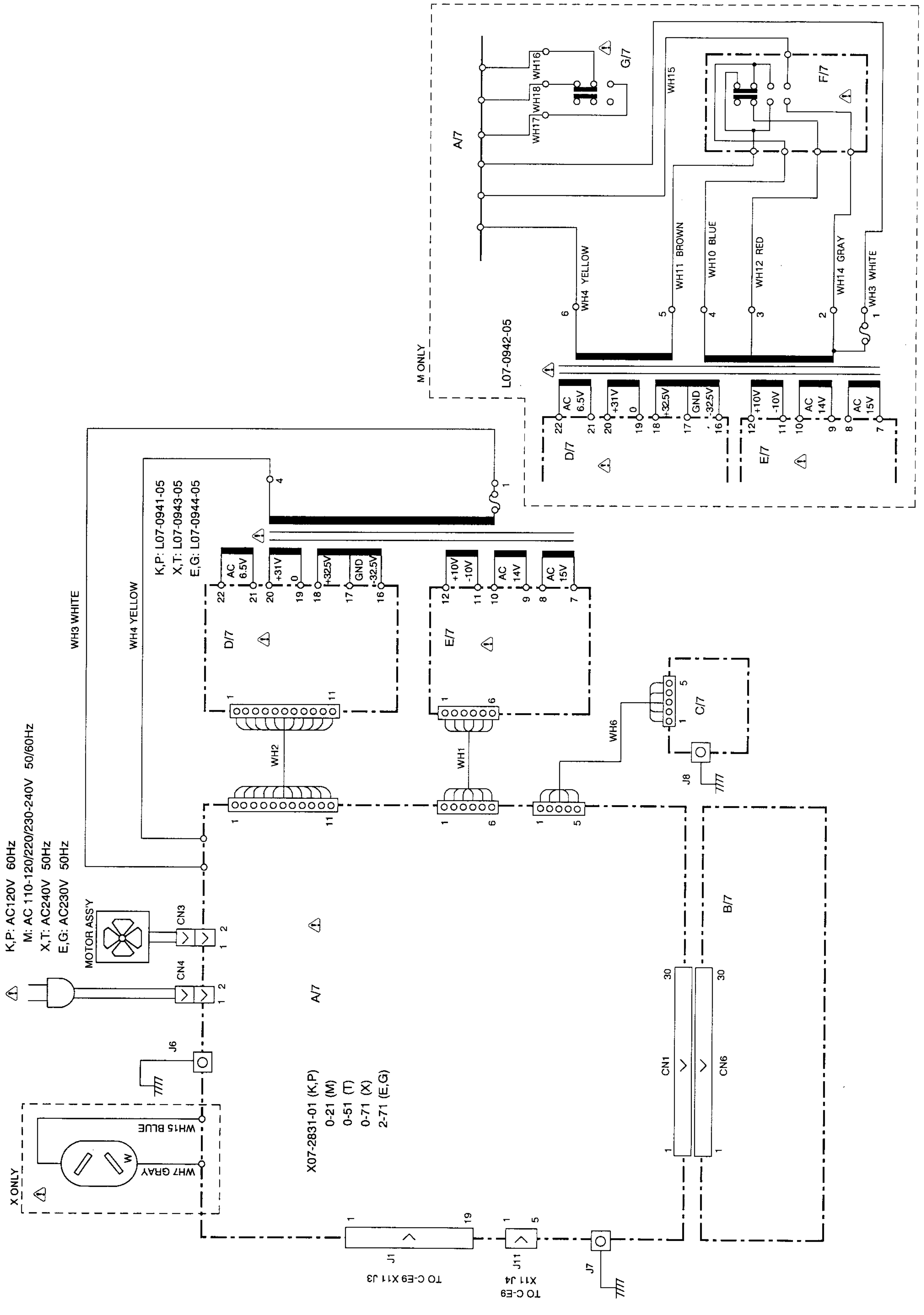
ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Unless otherwise specified, the individual switches should be set as following: POWER:ON							
1	IDLE CURRENT	-	Connect a DC voltmeter between CP1 (L), CP2 (R)	VOLUME:0	VR1 (L) VR2 (R) (X07-)	11mV	(a)

(a)

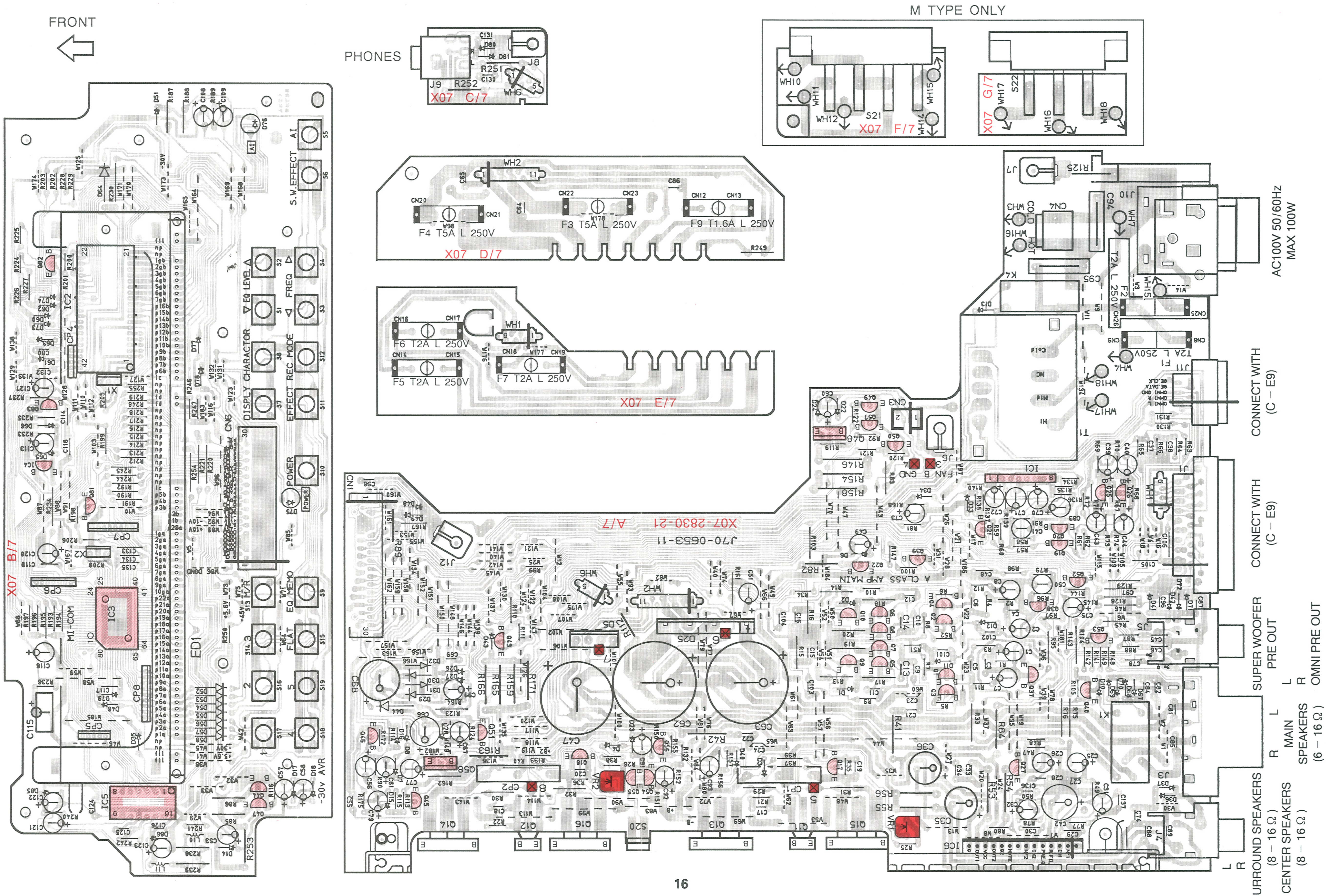

DC voltmeter
CP 1 (L)
CP 2 (R)
MPC725
0.22ΩK + 0.22ΩK
FU163

WIRING DIAGRAM


A/7
G/7
F/7
WH15
WH16
WH17
WH18
WH4 YELLOW
WH11 BROWN
WH10 BLUE
WH12 RED
WH14 GRAY
WH3 WHITE
M ONLY
L07-0942-05
AC 6.5V
+31V
0
-32.5V
GND
+32.5V
+10V
-10V
AC 14V
AC 15V
D/7
E/7
K,P: L07-0941-05
X,T: L07-0943-05
E,G: L07-0944-05
WH3 WHITE
WH4 YELLOW
WH2
WH1
WH6
C/7
J8
K,P: AC120V 60Hz
M: AC 110-120/220/230-240V 50/60Hz
X,T: AC240V 50Hz
E,G: AC230V 50Hz
MOTOR ASS'Y
CN3
CN4
J6
X ONLY
WH15 BLUE
WH7 GRAY
W
X07-2831-01 (K,P)
0-21 (M)
0-51 (T)
0-71 (X)
2-71 (E,G)
B/7
CN1
CN6
J1
J11
J7
TO C-E9 X11 J3
TO C-E9 X11 J4

PC BOARD VIEW (COMPONENT SIDE VIEW)

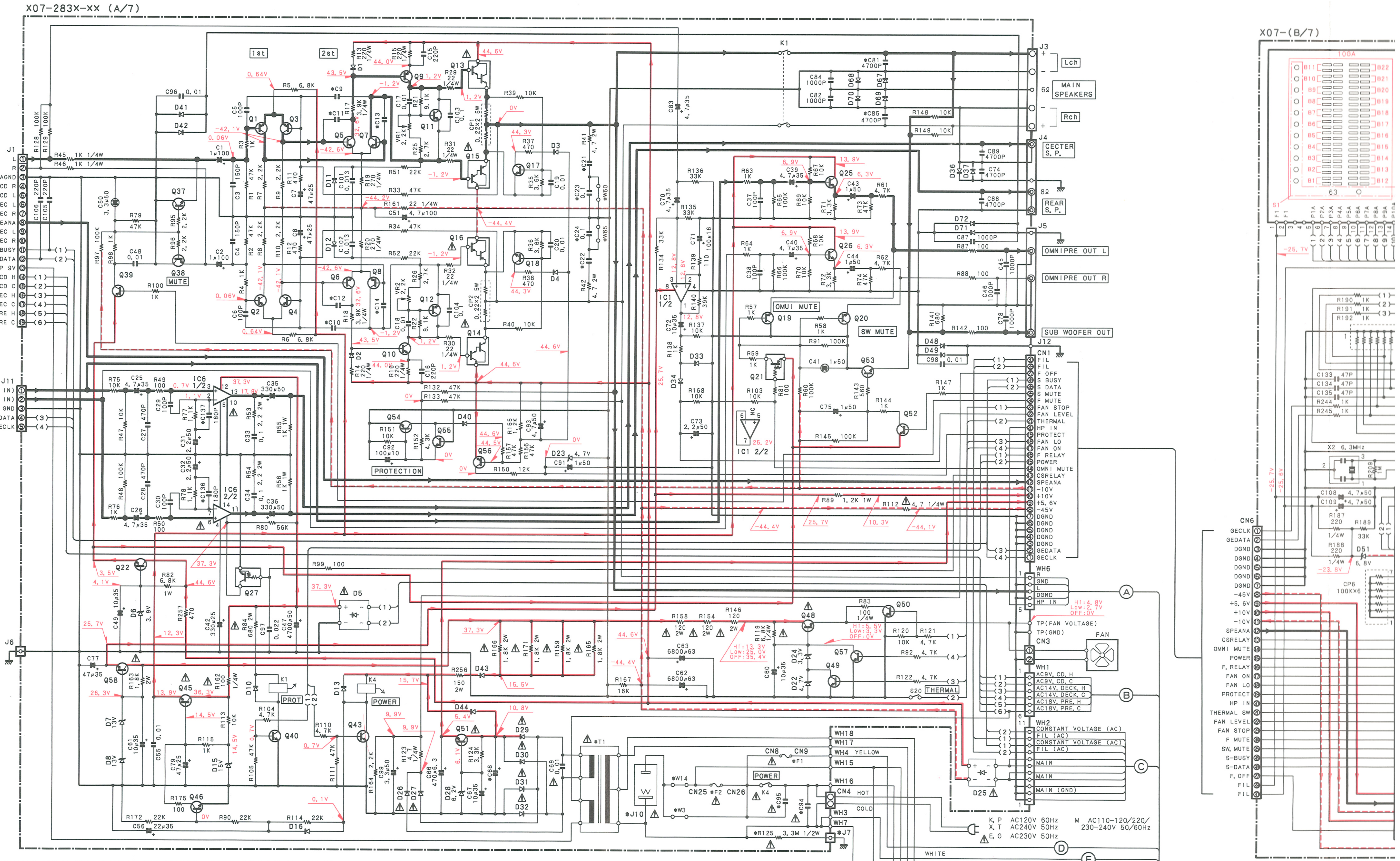
MAIN AMP UNIT (X07-283X-XX) 1-01 : K,P 0-21 : M 2-71 : E,G 0-51 : T 0-71 : X



FRONT
PHONES
J9
J8
R251
R252
X07 C/7
M TYPE ONLY
WH10
WH11
WH12
S21
WH14
WH15
X07 F/7
X07 G/7
WH17
S22
WH16
WH18
WH2
F4 T5A L 250V
F3 T5A L 250V
F9 T1.6A L 250V
X07 D/7
F6 T2A L 250V
F5 T2A L 250V
F7 T2A L 250V
WH1
X07 E/7
S.W.EFFECT
EQ LEVEL
FREQ
DISPLY CHARACTER
EFFECT REC MODE
POWER
M/R
EQ MEMO
FLAT
ED1
MI-COM
IC2
IC3
IC5
X07 B/7
X07-2830-21 A/7
J70-0653-11
A CLASS AMP MAIN
IC1
IC61
J7
J10
J11
J12
COLD
HOT
T2A L 250V
F1
F2
AC100V 50/60Hz
MAX 100W
CONNECT WITH
(C – E9)
CONNECT WITH
(C – E9)
SUPER WOOFER
PRE OUT
OMNI PRE OUT
L
R
MAIN
SPEAKERS
(6 – 16 Ω)
SURROUND SPEAKERS
(8 – 16 Ω)
CENTER SPEAKERS
(8 – 16 Ω)

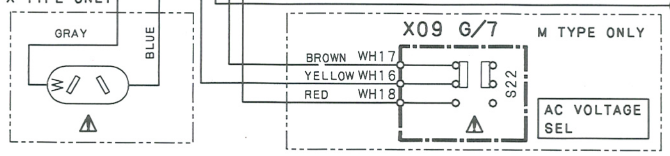
Refer to the schematic diagram for the values of resistors and capacitors.

X07-283X-XX (A/7)


X07-(B/7)
1st
2st
J1
L
R
AGND
CD R
CD L
DEC L
DEC R
SPEANA
REC L
REC R
SBUSY
SDATA
BACK UP 9V
AC9V, CD H
AC9V, CD C
AC16V, DEC H
AC16V, DEC C
AC16V, PRE H
AC16V, PRE C
TO C-E9 X11 J3
J11
L (C IN)
R (S IN)
GND
GEDATA
GECLK
TO C-E9 X11 J4
J6
MUTE
PROTECTION
IC6 1/2 3
IC6 2/2
IC1 1/2
IC1 2/2
OMNI MUTE
SW MUTE
K1
J3
Lch
MAIN SPEAKERS
Rch
6Ω
J4
CECTER S.P.
8Ω
REAR S.P.
J5
OMNIPRE OUT L
OMNIPRE OUT R
SUB WOOFER OUT
J12
CN1
FIL
F OFF
S BUSY
S DATA
S MUTE
F MUTE
FAN STOP
FAN LEVEL
THERMAL
HP IN
PROTECT
FAN LO
FAN ON
F RELAY
POWER
OMNI MUTE
CSRELAY
SPEANA
-10V
+10V
+5.6V
-45V
DGND
GEDATA
GECLK
WH6
R
GND
L
DGND
HP IN
HI:4.8V
Low:2.7V
OFF:0V
TP(FAN VOLTAGE)
TP(GND)
CN3
FAN
WH1
AC9V, CD, H
AC9V, CD, C
AC14V, DECK, H
AC14V, DECK, C
AC18V, PRE, H
AC18V, PRE, C
WH2
CONSTANT VOLTAGE (AC)
FIL (AC)
MAIN
MAIN (GND)
WH18
WH17
WH4 YELLOW
WH15
WH16
CN4 HOT
COLD
WH3
WH7
CN8
CN9
F1
F2
CN25
CN26
W14
W3
J10
J7
R125 3.3M 1/2W
T1
PROT
POWER
K4
S20
THERMAL
D25
HI:13.3V
Low:25.0V
OFF:35.4V
HI:5.5V
Low:3.3V
OFF:0V
K, P AC120V 60Hz
X, T AC240V 50Hz
E, G AC230V 50Hz
M AC110-120/220/230-240V 50/60Hz
WHITE
CN6
GECLK
GEDATA
DGND
-45V
+5.6V
+10V
-10V
SPEANA
CSRELAY
OMNI MUTE
POWER
F. RELAY
FAN ON
FAN LO
PROTECT
HP IN
THERMAL SW
FAN LEVEL
FAN STOP
SW. MUTE
S-BUSY
S-DATA
F. OFF
FIL
X2 6.3MHz
CP6 100K×6
D51 6.8V
A
B
C
D
E
F

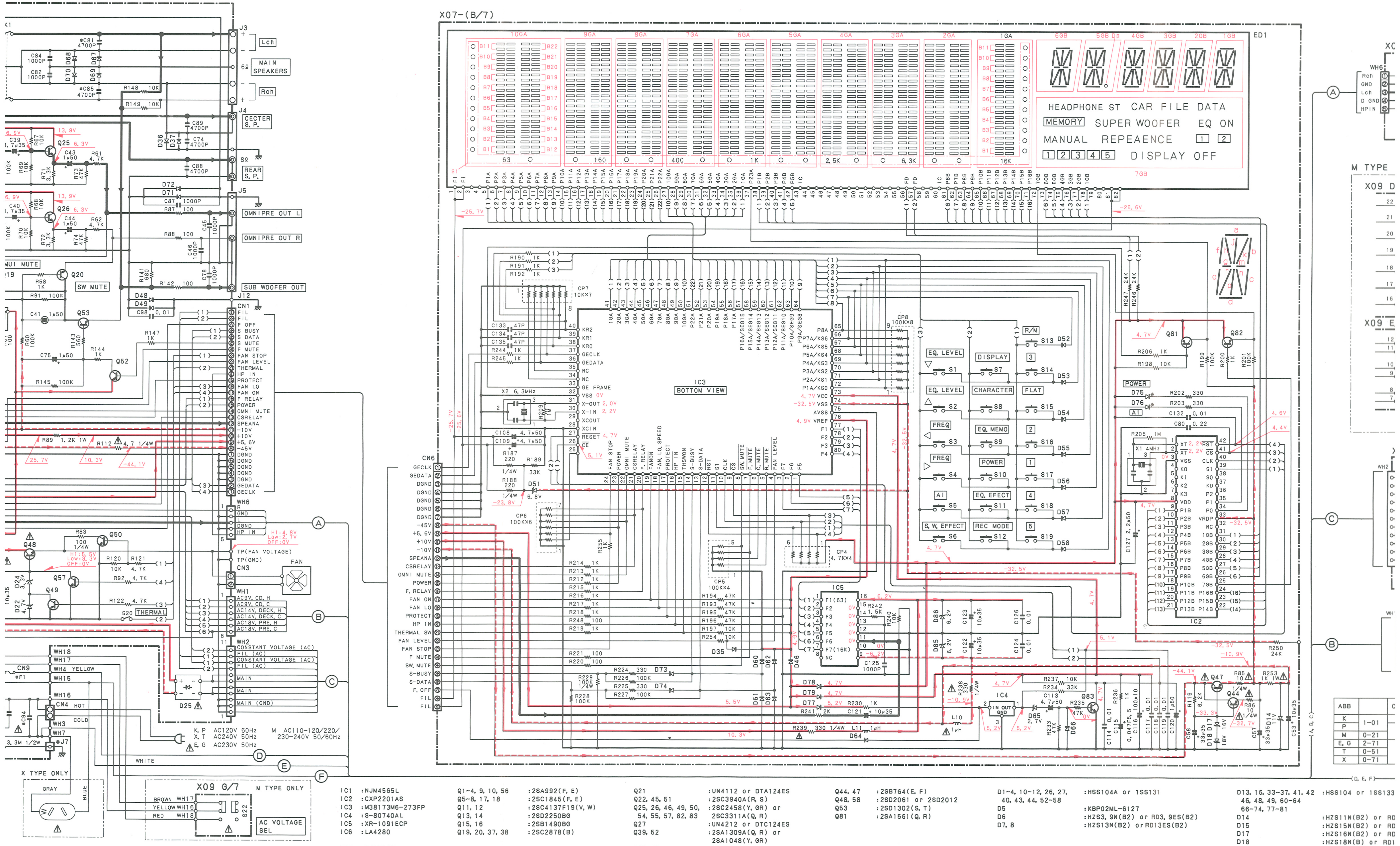
COUNTRY	ABB	REF. NO. UNIT NAME	W3, 60 W65	WH7	W11 W134	W14	J7	J10	T1	S21 S22	C9 C10	C11	C13 C14	C21, 22	C23, 24, 81 85, 136, 137	C68	C94, 95	R125	CN25 CN26	F1	F2
USA	K	1-01	YES	NO	YES	NO	YES	E03-0146-05	L07-0819-05	NO	3P	100P	100P	0.047	NO	470µ25	6800P	YES	NO	4A 125V	NO
CANADA	P																				
OTHER AREAS	M	0-21			NO		NO	E03-0108-05	L07-0512-05	YES						1000µ25		NO	YES	T2AL 250V	T2AL 250V
EUROPE, GERMANY	E, G	2-71	NO		YES	YES			L07-1817-05	NO	10P	220P	180P	0.1	YES	470µ25	0.01µ				T2.5AL 250V
ENGLAND	T	0-51	YES			NO		E03-0109-05	L07-0821-05		3P	100P	100P	0.047	NO		6800P		NO		T2.5A 250V
AUSTRALIA	X	0-71		YES		YES		E03-0141-05													

X TYPE ONLY


GRAY
BLUE
X09 G/7
M TYPE ONLY
BROWN WH17
YELLOW WH16
RED WH18
S22
AC VOLTAGE SEL

IC1	:NJM4565L	Q1~4, 9, 10, 56	:2SA992(
IC2	:CXP2201AS	Q5~8, 17, 18	:2SC1845
IC3	:M38173M6-273FP	Q11, 12	:2SC4137
IC4	:S-80740AL	Q13, 14	:2SD2250
IC5	:XR-1091ECP	Q15, 16	:2SB1490
IC6	:LA4280	Q19, 20, 37, 38	:2SC2878

ED1 :BJ171GK


X07-(B/7)
ED1
IC3
BOTTOM VIEW
IC2
IC4
IC5
HEADPHONE ST
CAR FILE DATA
MEMORY
SUPER WOOFER
EQ ON
MANUAL
REPEAENCE
DISPLAY OFF
J3
Lch
MAIN SPEAKERS
Rch
J4
CECTER S. P.
REAR S. P.
J5
OMNIPRE OUT L
OMNIPRE OUT R
SUB WOOFER OUT
J12
CN1
CN3
CN4
CN6
CN9
WH1
WH2
WH6
FAN
SW MUTE
MUI MUTE
THERMAL
X09 G/7
M TYPE ONLY
X TYPE ONLY
AC VOLTAGE SEL
BROWN
YELLOW
RED
GRAY
BLUE
WHITE
K, P AC120V 60Hz
X, T AC240V 50Hz
E, G AC230V 50Hz
M AC110-120/220/230-240V 50/60Hz
M TYPE
X09 D
X09 E
ABB
K 1-01
P
M 0-21
E, G 2-71
T 0-51
X 0-71
EQ. LEVEL
DISPLAY
R/M
CHARACTER
FLAT
FREQ
EQ. MEMO
POWER
AI
EQ. EFECT
S. W. EFFECT
REC MODE
X1 4MHz
X2 6. 3MHz

IC1 :NJM4565L
IC2 :CXP2201AS
IC3 :M38173M6-273FP
IC4 :S-80740AL
IC5 :XR-1091ECP
IC6 :LA4280

ED1 :BJ171GK

Q1~4, 9, 10, 56 :2SA992(F, E)
Q5~8, 17, 18 :2SC1845(F, E)
Q11, 12 :2SC4137F19(V, W)
Q13, 14 :2SD2250BG
Q15, 16 :2SB1490BG
Q19, 20, 37, 38 :2SC2878(B)

Q21 :UN4112 or DTA124ES
Q22, 45, 51 :2SC3940A(R, S)
Q25, 26, 46, 49, 50, 54, 55, 57, 82, 83 :2SC2458(Y, GR) or 2SC3311A(Q, R)
Q27 :UN4212 or DTC124ES
Q39, 52 :2SA1309A(Q, R) or 2SA1048(Y, GR)
Q40, 43 :2SC2003(L, K)

Q44, 47 :2SB764(E, F)
Q48, 58 :2SD2061 or 2SD2012
Q53 :2SD1302(S, T)
Q81 :2SA1561(Q, R)

D1~4, 10~12, 26, 27, 40, 43, 44, 52~58 :HSS104A or 1SS131
D5 :KBP02ML-6127
D6 :HZS3. 9N(B2) or RD3. 9ES(B2)
D7, 8 :HZS13N(B2) or RD13ES(B2)

D13, 16, 33~37, 41, 42 46, 48, 49, 60~64 66~74, 77~81 :HSS104 or 1SS133
D14 :HZS11N(B2) or RD
D15 :HZS15N(B2) or RD
D17 :HZS16N(B2) or RD
D18 :HZS18N(B) or RD1

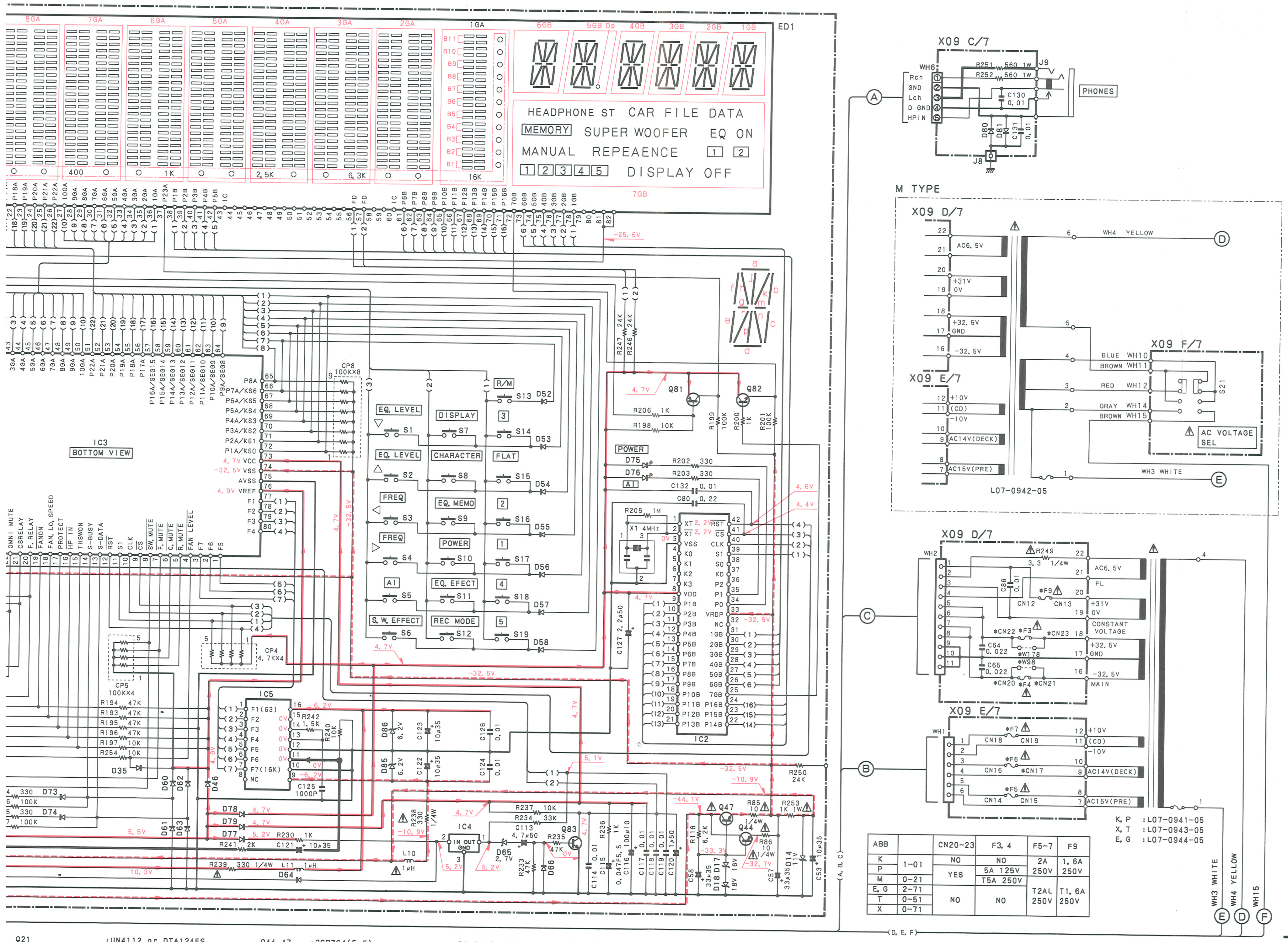

ED1
HEADPHONE ST CAR FILE DATA
MEMORY SUPER WOOFER EQ ON
MANUAL REPEAENCE
DISPLAY OFF
IC3
BOTTOM VIEW
IC2
IC4
IC5
CP4
CP5
CP8
EQ. LEVEL
DISPLAY
CHARACTER
FLAT
FREQ
EQ. MEMO
POWER
AI
EQ. EFFECT
S. W. EFFECT
REC MODE
R/M
X09 C/7
PHONES
M TYPE
X09 D/7
X09 E/7
X09 F/7
AC VOLTAGE SEL
L07-0942-05
K, P :L07-0941-05
X, T :L07-0943-05
E, G :L07-0944-05
WH3 WHITE
WH4 YELLOW
WH15

ABB		CN20~23	F3, 4	F5~7	F9
K	1-01	NO	NO	2A 250V	1. 6A 250V
P		YES	5A 125V		
M	0-21		T5A 250V	T2AL 250V	T1. 6A 250V
E, G	2-71	NO	NO		
T	0-51				
X	0-71				

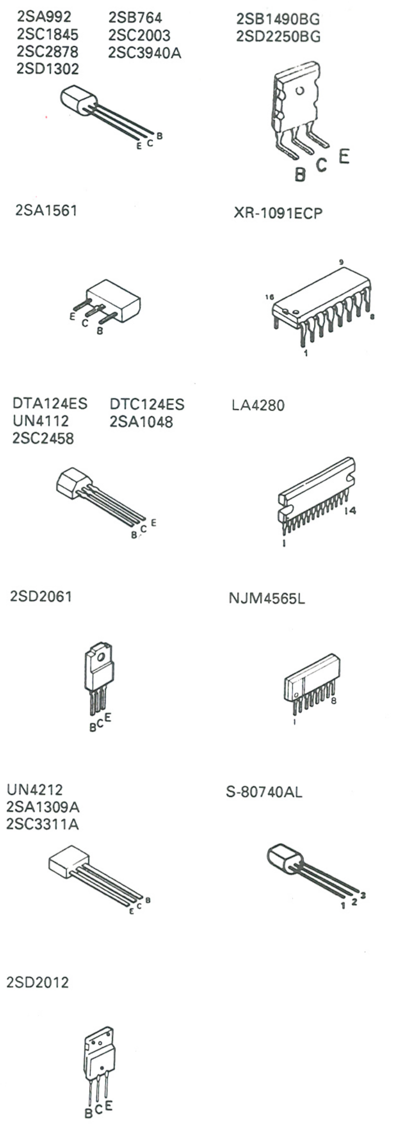
Q21 :UN4112 or DTA124ES
Q22, 45, 51 :2SC3940A(R, S)
Q25, 26, 46, 49, 50, 54, 55, 57, 82, 83 :2SC2458(Y, GR) or 2SC3311A(Q, R)
Q27 :UN4212 or DTC124ES
Q39, 52 :2SA1309A(Q, R) or 2SA1048(Y, GR)
Q40, 43 :2SC2003(L, K)

Q44, 47 :2SB764(E, F)
Q48, 58 :2SD2061 or 2SD2012
Q53 :2SD1302(S, T)
Q81 :2SA1561(Q, R)

D1~4, 10~12, 26, 27, 40, 43, 44, 52~58 :HSS104A or 1SS131
D5 :KBP02ML-6127
D6 :HZS3. 9N(B2) or RD3. 9ES(B2)
D7, 8 :HZS13N(B2) or RD13ES(B2)

D13, 16, 33~37, 41, 42 46, 48, 49, 60~64 66~74, 77~81 :HSS104 or 1SS133
D14 :HZS11N(B2) or RD11ES(B2)
D15 :HZS15N(B2) or RD15ES(B2)
D17 :HZS16N(B2) or RD16ES(B2)
D18 :HZS18N(B) or RD18ES(B)

D24 :HZS3. 3N(B2) or RD3. 3ES(B2)
D22, 23 :HZS4. 7N(B) or RD4. 7ES(B)
D25 :D5SBA20F03 or RBV-602LFA
D28, 85, 86 :HZS6. 2N(B2) or RD6. 2ES(B2)
D29~32 :S5688B or 1SR139-100
D65 :HZS2. 7N(B2) or RD2. 7ES(B2)
D51 :HZS6. 8N(B2) or RD6. 8ES(B2)


2SA992
2SC1845
2SC2878
2SD1302
2SB764
2SC2003
2SC3940A
2SB1490BG
2SD2250BG
B C E
2SA1561
XR-1091ECP
DTA124ES
UN4112
2SC2458
DTC124ES
2SA1048
LA4280
2SD2061
NJM4565L
UN4212
2SA1309A
2SC3311A
S-80740AL
2SD2012

━━━ SIGNAL LINE
━━━ GND LINE
━━━ +B LINE
- - - - -B LINE

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

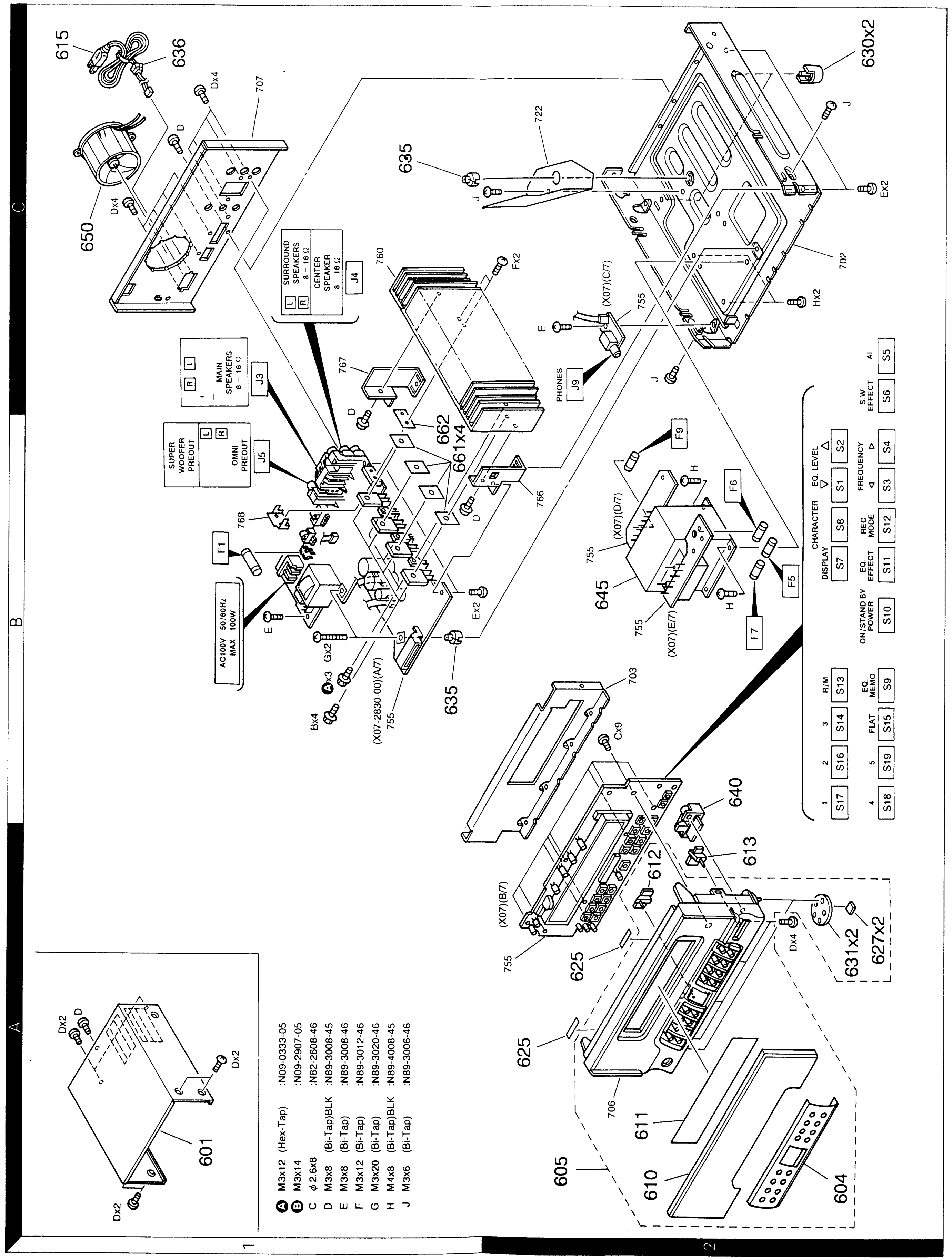
CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

Y08-5090-11

B-E9

KENWOOD

EXPLODED VIEW (UNIT)


615
636
Dx4
707
650
D
722
635
J
630x2
Ex2
702
Hx2
SURROUND SPEAKERS 8 – 16 Ω
CENTER SPEAKER 8 – 16 Ω
J4
760
Fx2
(X07)(C/7)
755
E
MAIN SPEAKERS 8 – 16 Ω
J3
767
PHONES
J9
SUPER WOOFER PREOUT
OMNI PREOUT
J5
662
661x4
766
768
F1
AC100V 50/60Hz MAX 100W
Gx2
Ax3
Bx4
(X07-2830-00)(A/7)
635
F9
H
(X07)(D/7)
F6
645
F5
F7
(X07)(E/7)
DISPLAY S7
CHARACTER S8
EQ. LEVEL S1 S2
EQ. EFFECT S11
REC MODE S12
FREQUENCY S3 S4
S.W. EFFECT S6
AI S5
ON/STANDBY POWER S10
R/M S13
EQ. MEMO S9
3 S14
FLAT S15
2 S16
5 S19
1 S17
4 S18
703
Cx9
640
613
612
(X07)(B/7)
625
631x2
627x2
625
706
611
610
605
604
601
Dx2
A M3x12 (Hex-Tap) :N09-0333-05
B M3x14 :N09-2907-05
C ϕ2.6x8 :N82-2608-46
D M3x8 (Bi-Tap)BLK :N89-3008-45
E M3x8 (Bi-Tap) :N89-3008-46
F M3x12 (Bi-Tap) :N89-3012-46
G M3x20 (Bi-Tap) :N89-3020-46
H M4x8 (Bi-Tap)BLK :N89-4008-45
J M3x6 (Bi-Tap) :N89-3006-46
A
B
C
1
2

Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

⁎ New Parts

Parts without **Parts No.** are not supplied.

Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.

Teile ohne **Parts No.** werden nicht geliefert.

	Ref. No. 参照番号	Address 位 置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕 向
					B-E9	
	601	1A	⁎	A01-3134-01	METALLIC CABINET	
	604	2A	⁎	A21-1858-03	DRESSING PANEL	
	605	2A	⁎	A60-0583-12	PANEL ASSY	
	610	2A	⁎	B10-2025-03	FRONT GLASS	
	611	2A	⁎	B11-0278-03	COLOR FILTER	
	612	2A	⁎	B12-0243-14	INDICATOR	
	613	2A	⁎	B12-0244-04	INDICATOR	
	-			B46-0310-03	WARRANTY CARD	TEG
⚠	615	1C		E30-2592-15	AC POWER CORD	MEG
⚠	615	1C		E30-2650-05	AC POWER CORD	KP
⚠	615	1C		E30-2717-05	AC POWER CORD	X
⚠	615	1C		E30-2721-05	AC POWER CORD	T
⚠	J10	1B		E03-0141-05	AC OUTLET	X
	625	2A		G10-0173-04	NON-WOVEN FABRIC	
	627	2A		G11-2052-14	CUSHION	
			⁎	H50-1085-04	ITEM CARTON CASE	K
			⁎	H50-1086-04	ITEM CARTON CASE	EG
			⁎	H50-1087-04	ITEM CARTON CASE	T
	-		⁎	H10-5768-02	POLYSTYRENE FOAMED FIXTURE(L)	PMX
	-		⁎	H10-5769-02	POLYSTYRENE FOAMED FIXTURE(R)	PMX
	-		⁎	H10-5770-02	POLYSTYRENE FOAMED FIXTURE(L)	KEG
	-		⁎	H10-5771-02	POLYSTYRENE FOAMED FIXTURE(R)	KEG
	-		⁎	H10-5772-02	POLYSTYRENE FOAMED FIXTURE(L)	T
	-		⁎	H10-5773-02	POLYSTYRENE FOAMED FIXTURE(R)	T
	-		⁎	H10-5922-03	POLYSTYRENE FOAMED FIXTURE	KTEG
	-		⁎	H13-0177-04	CARTON BOARD	X
	-			H25-0681-04	PROTECTION BAG	
	630	2C		J02-0366-15	FOOT REAR	
	631	2A		J02-1095-04	FOOT FRONT	
	635	1B,1C		J19-3609-04	UNIT HOLDER	
⚠	636	1C		J42-0083-05	POWER CORD BUSHING	
	-			J61-0307-05	WIRE BAND	
	640	2B	⁎	K29-5934-03	KNOB SW EFFECT/AI	
⚠	645	2B	⁎	L07-0941-05	POWER TRANSFORMER	KP
⚠	645	2B	⁎	L07-0942-05	POWER TRANSFORMER	M
⚠	645	2B	⁎	L07-0943-05	POWER TRANSFORMER	XT
⚠	645	2B	⁎	L07-0944-05	POWER TRANSFORMER	EG
	-	1A	⁎	N29-0277-05	PUSH RIVET	M
	C	2B		N82-2608-46	BINDING HEAD TAPTITE SCREW	
	D	1A,1C		N89-3008-45	BINDING HEAD TAPTITE SCREW	
	E	1B,2C		N89-3008-46	BINDING HEAD TAPTITE SCREW	
	G	1B		N89-3020-46	BINDING HEAD TAPTITE SCREW	
	H	2B,2C		N89-4008-45	BINDING HEAD TAPTITE SCREW	
	J	1C,2C		N89-3006-46	BINDING HEAD TAPTITE SCREW	
	650	1C	⁎	T49-0024-12	MOTOR ASSY	
	MAIN AMP UNIT (X07-283X-XX) 1-01 : K,P 0-21 : M 2-71 : E,G 0-51 : T 0-71 : X					
	D75 ,76			B30-1290-05	LED POWER/AI	
	C1 ,2			CE04KW2A010M	ELECTRO 1.0UF 100WV	
	C3 ,4			CQ92FM1H151K	MYLAR 150PF K	

L : Scandinavia	**K** : USA	**P** : Canada	**R** : Mexico
Y : PX (Far East, Hawaii)	**T** : England	**E** : Europe	**G** : Germany
Y : AAFES (Europe)	**X** : Australia	**M** : Other Areas	

⚠ indicates safety critical comp

PARTS LIST

e not supplied.
es dans le **Parts No.** ne sont pas fournis.
n nicht geliefert.

New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
		B-E9		
*	A01-3134-01	METALLIC CABINET		
*	A21-1858-03	DRESSING PANEL		
*	A60-0583-12	PANEL ASSY		
*	B10-2025-03	FRONT GLASS		
*	B11-0278-03	COLOR FILTER		
*	B12-0243-14	INDICATOR		
*	B12-0244-04	INDICATOR		
	B46-0310-03	WARRANTY CARD	TEG	
	E30-2592-15	AC POWER CORD	MEG	
	E30-2650-05	AC POWER CORD	KP	
	E30-2717-05	AC POWER CORD	X	
	E30-2721-05	AC POWER CORD	T	
	E03-0141-05	AC OUTLET	X	
	G10-0173-04	NON-WOVEN FABRIC		
	G11-2052-14	CUSHION		
*	H50-1085-04	ITEM CARTON CASE	K	
*	H50-1086-04	ITEM CARTON CASE	EG	
*	H50-1087-04	ITEM CARTON CASE	T	
*	H10-5768-02	POLYSTYRENE FOAMED FIXTURE(L)	PMX	
*	H10-5769-02	POLYSTYRENE FOAMED FIXTURE(R)	PMX	
*	H10-5770-02	POLYSTYRENE FOAMED FIXTURE(L)	KEG	
*	H10-5771-02	POLYSTYRENE FOAMED FIXTURE(R)	KEG	
*	H10-5772-02	POLYSTYRENE FOAMED FIXTURE(L)	T	
*	H10-5773-02	POLYSTYRENE FOAMED FIXTURE(R)	T	
*	H10-5922-03	POLYSTYRENE FOAMED FIXTURE	KTEG	
*	H13-0177-04	CARTON BOARD	X	
	H25-0681-04	PROTECTION BAG		
	J02-0366-15	FOOT REAR		
	J02-1095-04	FOOT FRONT		
	J19-3609-04	UNIT HOLDER		
	J42-0083-05	POWER CORD BUSHING		
	J61-0307-05	WIRE BAND		
*	K29-5934-03	KNOB SW EFFECT/AI		
*	L07-0941-05	POWER TRANSFORMER	KP	
*	L07-0942-05	POWER TRANSFORMER	M	
*	L07-0943-05	POWER TRANSFORMER	XT	
*	L07-0944-05	POWER TRANSFORMER	EG	
*	N29-0277-05	PUSH RIVET	M	
	N82-2608-46	BINDING HEAD TAPTITE SCREW		
	N89-3008-45	BINDING HEAD TAPTITE SCREW		
	N89-3008-46	BINDING HEAD TAPTITE SCREW		
	N89-3020-46	BINDING HEAD TAPTITE SCREW		
	N89-4008-45	BINDING HEAD TAPTITE SCREW		
	N89-3006-46	BINDING HEAD TAPTITE SCREW		
*	T49-0024-12	MOTOR ASSY		
T (X07-283X-XX) 1-01 : K,P 0-21 : M 2-71 : E,G 0-51 : T 0-71 : X				
	B30-1290-05	LED POWER/AI		
	CE04KW2A010M	ELECTRO 1.0UF 100WV		
	CQ92FM1H151K	MYLAR 150PF K		

JSA **P** : Canada **R** : Mexico
ngland **E** : Europe **G** : Germany
ustralia **M** : Other Areas

⚠ indicates safety critical components.

PARTS LIST

⋇ New Parts
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Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C5 ,6			CC45FSL1H101J	CERAMIC 100PF J		
C7 ,8			CE04KW1E470M	ELECTRO 47UF 25WV		
C9 ,10			CC45FSL1H030C	CERAMIC 3.0PF C	KPMXT	
C9 ,10			CC45FSL1H100D	CERAMIC 10PF D	EG	
C11 ,12			CC45FSL1H101J	CERAMIC 100PF J	KPMXT	
C11 ,12			CC45FSL1H221J	CERAMIC 220PF J	EG	
C13 ,14		*	CC45FSL2H101J	CERAMIC 100PF J	KPMXT	
C13 ,14		*	CC45FSL2H181J	CERAMIC 180PF J	EG	
C15 ,16			CC45FSL1H221J	CERAMIC 220PF J		
C17 -20			CK45FF1H103Z	CERAMIC 0.010UF Z		
C21 ,22		*	CQ93FMG1H104J	MYLAR 0.10UF J	EG	
C21 ,22		*	CQ93FMG1H473J	MYLAR 0.047UF J	KPMXT	
C23 ,24		*	CQ93FMG1H104J	MYLAR 0.10UF J	EG	
C25 ,26			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C27 ,28			CK45FB1H471K	CERAMIC 470PF K		
C29 ,30			C91-0745-05	CERAMIC 100PF K		
C31 ,32			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C33 ,34		*	CQ93FMG1H104J	MYLAR 0.10UF J		
C35 ,36			CE04KW1H331M	ELECTRO 330UF 50WV		
C37 ,38			CC45FSL1H101J	CERAMIC 100PF J		
C39 ,40			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C41			CE04HW1H010M	NP-ELEC 1.0UF 50WV		
C42			CE04DW1E331M	ELECTRO 330UF 25WV		
C43 ,44			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C45 ,46			C91-0757-05	CERAMIC 1000PF K		
C47			C90-1588-05	ELECTRO 4700UF 50WV		
C48			C91-0769-05	CERAMIC 0.01UF K		
C49			CE04KW1V100M	ELECTRO 10UF 35WV		
C50			CE04HW1H3R3M	NP-ELEC 3.3UF 50WV		
C51			CE04KW2A4R7M	ELECTRO 4.7UF 100WV		
C53			CE04KW1V100M	ELECTRO 10UF 35WV		
C55			CK45FF1H103Z	CERAMIC 0.010UF Z		
C56			CE04KW1V220M	ELECTRO 22UF 35WV		
C57 ,58			CE04KW1V330M	ELECTRO 33UF 35WV		
C60 ,61			CE04KW1V100M	ELECTRO 10UF 35WV		
C62 ,63		*	C90-3572-05	ELECTRO 6800UF 63WV		
C64 ,65			CK45FF1H223Z	CERAMIC 0.022UF Z		
C66			CE04KW0J471M	ELECTRO 470UF 6.3WV		
C67			CE04KW1V100M	ELECTRO 10UF 35WV		
C68			CE04KW1E102M	ELECTRO 1000UF 25WV	M	
C68			CE04KW1E471M	ELECTRO 470UF 25WV	KPXTEG	
⚠ C69			CK45FF1H103Z	CERAMIC 0.010UF Z		
C70			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C71			CE04KW1C101M	ELECTRO 100UF 16WV		
C72			CE04KW1V100M	ELECTRO 10UF 35WV		
C73			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C74			CK45FF1H472Z	CERAMIC 4700PF Z		
C75			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C77			CE04KW1V470M	ELECTRO 47UF 35WV		
C78			C91-0757-05	CERAMIC 1000PF K		
C79			CE04KW1E470M	ELECTRO 47UF 25WV		
C80			CK45FF1H223Z	CERAMIC 0.022UF Z		
C81			CK45FF1H472Z	CERAMIC 4700PF Z	EG	
C82			CK45FB1H102K	CERAMIC 1000PF K		
C83			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		

L : Scandinavia **K** : USA **P** : Canada **R** : Mexico
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⚠ indicates safety critical components.

⋇ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No**
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts 部品
C84			CK45FB1H
C85			CK45FF1H
C86			CK45FF1H
C87			CK45FB1H
C88 ,89			CK45FF1H
C91			CE04KW1H
C92			CE04KW1A
C93			CE04KW1H
⚠ C94			C91-1439
⚠ C94 ,95			C91-1488
⚠ C95			C91-0647
C96			CK45FF1H
C98			CK45FF1H
C99			CE04KW1H
C101,102		*	CQ93FMG1
C103,104		*	CQ93FMG1
C105,106			C91-0749
C108,109			CE04KW1H
C113			CE04KW1H
C114			C91-0769
C115			C90-1826
C116			CE04KW1A
C117-119			C91-0769
C120			CE04KW1H
C121-123			CE04KW1V
C124			CK45FF1H
C125			CK45FB1H
C126			CK45FF1H
C127			CE04KW1H
C130-132			CK45FF1H
C133-135			C91-0737
C136,137			CC45FSL1
J1			E58-0006
J3			E70-0045
J4 ,5			E63-0018
J9			E11-0218
⚠ J10			E03-0108
⚠ J10			E03-0109
⚠ J10			E03-0146
J11		*	E58-0008
661	1B		F20-1284
662	1B	*	F20-1414
⚠ F1			F05-4028
⚠ F1			F06-2021
⚠ F2			F05-2525
⚠ F2			F06-2021
⚠ F3 ,4			F04-5022
⚠ F3 ,4			F05-5025
⚠ F5 -7			F04-2025
⚠ F5 -7			F06-2021
⚠ F9			F05-1623
⚠ F9			F05-1628
CN8 ,9			J13-0075

L : Scandinavia **K** : USA **P** : Ca
Y : PX (Far East, Hawaii) **T** : England **E** : Eu
Y : AAFES (Europe) **X** : Australia **M** : O

PARTS LIST

⁎ New Parts
Parts without **Parts No.** are not supplied.
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Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
C5 ,6			CC45FSL1H101J	CERAMIC 100PF J		
C7 ,8			CE04KW1E470M	ELECTRO 47UF 25WV		
C9 ,10			CC45FSL1H030C	CERAMIC 3.0PF C	KPMXT	
C9 ,10			CC45FSL1H100D	CERAMIC 10PF D	EG	
C11 ,12			CC45FSL1H101J	CERAMIC 100PF J	KPMXT	
C11 ,12			CC45FSL1H221J	CERAMIC 220PF J	EG	
C13 ,14		*	CC45FSL2H101J	CERAMIC 100PF J	KPMXT	
C13 ,14		*	CC45FSL2H181J	CERAMIC 180PF J	EG	
C15 ,16			CC45FSL1H221J	CERAMIC 220PF J		
C17 -20			CK45FF1H103Z	CERAMIC 0.010UF Z		
C21 ,22		*	CQ93FMG1H104J	MYLAR 0.10UF J	EG	
C21 ,22		*	CQ93FMG1H473J	MYLAR 0.047UF J	KPMXT	
C23 ,24		*	CQ93FMG1H104J	MYLAR 0.10UF J	EG	
C25 ,26			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C27 ,28			CK45FB1H471K	CERAMIC 470PF K		
C29 ,30			C91-0745-05	CERAMIC 100PF K		
C31 ,32			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C33 ,34		*	CQ93FMG1H104J	MYLAR 0.10UF J		
C35 ,36			CE04KW1H331M	ELECTRO 330UF 50WV		
C37 ,38			CC45FSL1H101J	CERAMIC 100PF J		
C39 ,40			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C41			CE04HW1H010M	NP-ELEC 1.0UF 50WV		
C42			CE04DW1E331M	ELECTRO 330UF 25WV		
C43 ,44			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C45 ,46			C91-0757-05	CERAMIC 1000PF K		
C47			C90-1588-05	ELECTRO 4700UF 50WV		
C48			C91-0769-05	CERAMIC 0.01UF K		
C49			CE04KW1V100M	ELECTRO 10UF 35WV		
C50			CE04HW1H3R3M	NP-ELEC 3.3UF 50WV		
C51			CE04KW2A4R7M	ELECTRO 4.7UF 100WV		
C53			CE04KW1V100M	ELECTRO 10UF 35WV		
C55			CK45FF1H103Z	CERAMIC 0.010UF Z		
C56			CE04KW1V220M	ELECTRO 22UF 35WV		
C57 ,58			CE04KW1V330M	ELECTRO 33UF 35WV		
C60 ,61			CE04KW1V100M	ELECTRO 10UF 35WV		
C62 ,63		*	C90-3572-05	ELECTRO 6800UF 63WV		
C64 ,65			CK45FF1H223Z	CERAMIC 0.022UF Z		
C66			CE04KW0J471M	ELECTRO 470UF 6.3WV		
C67			CE04KW1V100M	ELECTRO 10UF 35WV		
C68			CE04KW1E102M	ELECTRO 1000UF 25WV	M	
C68			CE04KW1E471M	ELECTRO 470UF 25WV	KPXTEG	
⚠ C69			CK45FF1H103Z	CERAMIC 0.010UF Z		
C70			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C71			CE04KW1C101M	ELECTRO 100UF 16WV		
C72			CE04KW1V100M	ELECTRO 10UF 35WV		
C73			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C74			CK45FF1H472Z	CERAMIC 4700PF Z		
C75			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C77			CE04KW1V470M	ELECTRO 47UF 35WV		
C78			C91-0757-05	CERAMIC 1000PF K		
C79			CE04KW1E470M	ELECTRO 47UF 25WV		
C80			CK45FF1H223Z	CERAMIC 0.022UF Z		
C81			CK45FF1H472Z	CERAMIC 4700PF Z	EG	
C82			CK45FB1H102K	CERAMIC 1000PF K		
C83			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		

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C84			CK45FB1H102K	CERAMIC 1000PF K		
C85			CK45FF1H472Z	CERAMIC 4700PF Z	EG	
C86			CK45FF1H103Z	CERAMIC 0.010UF Z		
C87			CK45FB1H102K	CERAMIC 1000PF K		
C88 ,89			CK45FF1H472Z	CERAMIC 4700PF Z		
C91			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C92			CE04KW1A101M	ELECTRO 100UF 10WV		
C93			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
⚠ C94			C91-1439-05	FILM 0.01UF 250VAC	EG	
⚠ C94 ,95			C91-1488-05	MF 6800PF 250VAC	KPMXT	
⚠ C95			C91-0647-05	CERAMIC 0.01UF AC250V	EG	
C96			CK45FF1H103Z	CERAMIC 0.010UF Z		
C98			CK45FF1H103Z	CERAMIC 0.010UF Z		
C99			CE04KW1H3R3M	ELECTRO 3.3UF 50WV		
C101,102		*	CQ93FMG1H133J	MYLAR 0.013UF J		
C103,104		*	CQ93FMG1H104J	MYLAR 0.10UF J		
C105,106			C91-0749-05	CERAMIC 220PF K		
C108,109			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C113			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C114			C91-0769-05	CERAMIC 0.01UF K		
C115			C90-1826-05	BACKUP 0.047F 5.5WV		
C116			CE04KW1A101M	ELECTRO 100UF 10WV		
C117-119			C91-0769-05	CERAMIC 0.01UF K		
C120			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C121-123			CE04KW1V100M	ELECTRO 10UF 35WV		
C124			CK45FF1H103Z	CERAMIC 0.010UF Z		
C125			CK45FB1H102K	CERAMIC 1000PF K		
C126			CK45FF1H103Z	CERAMIC 0.010UF Z		
C127			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C130-132			CK45FF1H103Z	CERAMIC 0.010UF Z		
C133-135			C91-0737-05	CERAMIC 47PF J		
C136,137			CC45FSL1H181J	CERAMIC 180PF J	EG	
J1			E58-0006-05	RECTANGULAR RECEPTACLE CE9 X11		
J3			E70-0045-05	LOCK TERMINAL BOARD SPEAKERS		
J4 ,5			E63-0018-05	PHONO JACK(3P) PRE OUT		
J9			E11-0218-05	MINIATURE PHONE JACK PHONES		
⚠ J10			E03-0108-05	AC OUTLET	MEG	
⚠ J10			E03-0109-05	AC OUTLET	T	
⚠ J10			E03-0146-05	AC OUTLET	KP	
J11		*	E58-0008-05	RECTANGULAR RECEPTACLE CE9 X11		
661	1B		F20-1284-05	INSULATING BOARD		
662	1B	*	F20-1414-05	INSULATING SHEET		
⚠ F1			F05-4028-05	FUSE (UL) (125V 4A)	KP	
⚠ F1			F06-2021-05	FUSE (SEMKO) (250V T2AL)	MXTEG	
⚠ F2			F05-2525-05	FUSE (SEMKO) (250V T2.5AL)	EG	
⚠ F2			F06-2021-05	FUSE (SEMKO) (250V T2AL)	M	
⚠ F3 ,4			F04-5022-05	FUSE (UL) (125V 5A UL)	P	
⚠ F3 ,4			F05-5025-05	FUSE (SEMKO) (250V T5A)	M	
⚠ F5 -7			F04-2025-05	FUSE (UL) (250V 2A)	KP	
⚠ F5 -7			F06-2021-05	FUSE (SEMKO) (250V T2AL)	MXTEG	
⚠ F9			F05-1623-05	FUSE (SEMKO) (250V T1.6A)	MXTEG	
⚠ F9			F05-1628-05	FUSE (UL) (250V 1.6A)	KP	
CN8 ,9			J13-0075-05	FUSE CLIP		

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CN12-19			J13-0075-05	FUSE CLIP		
CN20-23			J13-0075-05	FUSE CLIP	PM	
CN25,26			J13-0075-05	FUSE CLIP	MEG	
L10 ,11			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
⚠ T1			L07-0512-05	POWER TRANSFORMER	M	
⚠ T1			L07-0819-05	POWER TRANSFORMER	KP	
⚠ T1			L07-0821-05	POWER TRANSFORMER	XT	
⚠ T1		*	L07-1817-05	POWER TRANSFORMER	EG	
X1			L78-0244-05	RESONATOR (4.000M)		
X2			L78-0602-05	RESONATOR (6.300MHZ)		
A	2B		N09-0333-05	TAPPING SCREW (3X12 HEX-TAP)		
B	2B		N09-2907-05	SEMS (TAPTITE SCREW)(3X14)		
E	2B		N89-3008-46	BINDING HEAD TAPTITE SCREW		
F	2C		N89-3012-46	BINDING HEAD TAPTITE SCREW		
CP1 ,2			R90-0187-05	MULTI-COMP 0.22X2 K 5W		
CP4			R90-0824-05	MULTI-COMP 4.7KX4		
CP5			R90-0482-05	MULTI-COMP 100KX4 J 1/6W		
CP6			R90-0500-05	MULTI-COMP 100KX6 J 1/4W		
CP7			R90-0815-05	MULTI-COMP 10K X7		
CP8			R90-0492-05	MULTI-COMP 100KX8 J 1/6W		
R13 -16			RD14NB2E221J	RD 220 J 1/4W		
R17 ,18			RD14NB2E392J	RD 3.9K J 1/4W		
R19 ,20			RD14NB2E271J	RD 270 J 1/4W		
R29 -32			RD14NB2E220J	RD 22 J 1/4W		
R41 ,42			RS14KB3D4R7J	FL-PROOF RS 4.7 J 2W		
R51 ,52			RN14BK2C2202F	RN 22.0K F 1/6W		
R53 ,54			RS14KB3D2R2J	FL-PROOF RS 2.2 J 2W		
R55 ,56			RS14KB3A102J	FL-PROOF RS 1.0K J 1W		
R82		*	RS14KB3A682J	FL-PROOF RS 6.8K J 1W		
R83			RD14NB2E101J	RD 100 J 1/4W		
⚠ R84			RS14KB3D681J	FL-PROOF RS 680 J 2W		
⚠ R85 ,86			RD14NB2E100J	RD 10 J 1/4W		
R89			RS14KB3A122J	FL-PROOF RS 1.2K J 1W		
⚠ R112			RD14GB2E4R7J	FL-PROOF RD 4.7 J 1/4W		
R123			RD14NB2E4R7J	RD 4.7 J 1/4W		
⚠ R125			R92-1769-05	CARBON 3.3M J 1/2W	KP	
⚠ R146			RS14KB3D121J	FL-PROOF RS 120 J 2W		
⚠ R154			RS14KB3D121J	FL-PROOF RS 120 J 2W		
⚠ R158			RS14KB3D121J	FL-PROOF RS 120 J 2W		
⚠ R159			RS14KB3D182J	FL-PROOF RS 1.8K J 2W		
R161			RD14NB2E220J	RD 22 J 1/4W		
⚠ R162			RD14NB2E101J	RD 100 J 1/4W		
R163			RS14KB3D182J	FL-PROOF RS 1.8K J 2W		
⚠ R165,166			RS14KB3D182J	FL-PROOF RS 1.8K J 2W		
⚠ R171			RS14KB3D182J	FL-PROOF RS 1.8K J 2W		
R187,188			RD14NB2E221J	RD 220 J 1/4W		
⚠ R238,239			RD14NB2E331J	RD 330 J 1/4W		
⚠ R249			RD14NB2E3R3J	RD 3.3 J 1/4W		
R251,252			RS14KB3A561J	FL-PROOF RS 560 J 1W		
⚠ R253			RS14KB3A102J	FL-PROOF RS 1.0K J 1W		
R256			RS14KB3D151J	FL-PROOF RS 150 J 2W		
VR1 ,2			R12-1617-05	TRIMMING POT.(2.2K)		
K1			S76-0005-05	MAGNETIC RELAY SPEAKERS		

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⚠ K4			S76-0009-05	MAGNETIC RELAY POWER		
S1 -19			S40-1064-05	PUSH SWITCH		
S20		*	S79-0018-05	THERMAL SWITCH		
⚠ S21			S31-2322-05	SLIDE SWITCH AC VOLTAGE SEL	M	
⚠ S22			S62-0001-05	SLIDE SWITCH AC VOLTAGE SEL	M	
D1 -4			HSS104A	DIODE		
D1 -4			1SS131	DIODE		
⚠ D5			KBP02ML-6127	DIODE		
D6			HZS3.9N(B2)	ZENER DIODE		
D6			RD3.9ES(B2)	ZENER DIODE		
D7 ,8			HZS13N(B2)	ZENER DIODE		
D7 ,8			RD13ES(B2)	ZENER DIODE		
D10 -12			HSS104A	DIODE		
D10 -12			1SS131	DIODE		
D13			HSS104	DIODE		
D13			1SS133	DIODE		
D14			HZS11N(B2)	ZENER DIODE		
D14			RD11ES(B2)	ZENER DIODE		
D15			HZS15N(B2)	ZENER DIODE		
D15			RD15ES(B2)	ZENER DIODE		
D16			HSS104	DIODE		
D16			1SS133	DIODE		
D17			HZS16N(B2)	ZENER DIODE		
D17			RD16ES(B2)	ZENER DIODE		
D18			HZS18N(B)	ZENER DIODE		
D18			RD18ES(B)	ZENER DIODE		
D22 ,23			HZS4.7N(B)	ZENER DIODE		
D22 ,23			RD4.7ES(B)	ZENER DIODE		
D24			HZS3.3N(B2)	ZENER DIODE		
D24			RD3.3ES(B2)	ZENER DIODE		
⚠ D25			D5SBA20F03	DIODE		
⚠ D25			RBV-602LFA	DIODE		
⚠ D26 ,27			HSS104A	DIODE		
⚠ D26 ,27			1SS131	DIODE		
D28			HZS6.2N(B2)	ZENER DIODE		
D28			RD6.2ES(B2)	ZENER DIODE		
⚠ D29 -32			S5688B	DIODE		
⚠ D29 -32			1SR139-100	DIODE		
D33 -37			HSS104	DIODE		
D33 -37			1SS133	DIODE		
D40			HSS104A	DIODE		
D40			1SS131	DIODE		
D41 ,42			HSS104	DIODE		
D41 ,42			1SS133	DIODE		
D43 ,44			HSS104A	DIODE		
D43 ,44			1SS131	DIODE		
D46			HSS104	DIODE		
D46			1SS133	DIODE		
D48 ,49			HSS104	DIODE		
D48 ,49			1SS133	DIODE		
D51			HZS6.8N(B2)	ZENER DIODE		
D51			RD6.8ES(B2)	ZENER DIODE		
D52 -58			HSS104A	DIODE		
D52 -58			1SS131	DIODE		
D60 -64			HSS104	DIODE		

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D60 -64			1SS133	DIODE		
D65			HZS2.7N(B2)	ZENER DIODE		
D65			RD2.7ES(B2)	ZENER DIODE		
D66 -74			HSS104	DIODE		
D66 -74			1SS133	DIODE		
D77 -81			HSS104	DIODE		
D77 -81			1SS133	DIODE		
D85 ,86			HZS6.2N(B2)	ZENER DIODE		
D85 ,86			RD6.2ES(B2)	ZENER DIODE		
ED1			BJ171GK	INDICATOR TUBE		
IC1			NJM4565L	IC(OP AMP X2)		
IC2			CXP2201AS	IC(FL DRIVER)		
IC3		*	M38173M6-273FP	MI-COM IC		
IC4			S-80740AL	IC(VOLTAGE DETECTOR)		
IC5			XR-1091ECP	IC(GE FILTER)		
⚠ IC6			LA4280	IC(AF POWER AMP/10WX2)		
Q1 -4			2SA992(F,E)	TRANSISTOR		
Q5 -8			2SC1845(F,E)	TRANSISTOR		
Q9 ,10			2SA992(F,E)	TRANSISTOR		
Q11 ,12			2SC4137F19(V,W)	TRANSISTOR		
⚠ Q13 ,14		*	2SD2250BG	TRANSISTOR		
⚠ Q15 ,16		*	2SB1490BG	TRANSISTOR		
Q17 ,18			2SC1845(F,E)	TRANSISTOR		
Q19 ,20			2SC2878(B)	TRANSISTOR		
Q21			DTA124ES	DIGITAL TRANSISTOR		
Q21			UN4112	TRANSISTOR		
Q22			2SC3940A(R,S)	TRANSISTOR		
Q25 ,26			2SC2458(Y,GR)	TRANSISTOR		
Q25 ,26			2SC3311A(Q,R)	TRANSISTOR		
Q27			DTC124ES	DIGITAL TRANSISTOR		
Q27			UN4212	TRANSISTOR		
Q37 ,38			2SC2878(B)	TRANSISTOR		
Q39			2SA1048(Y,GR)	TRANSISTOR		
Q39			2SA1309(Q,R)	TRANSISTOR		
Q40			2SC2003(L,K)	TRANSISTOR		
Q43			2SC2003(L,K)	TRANSISTOR		
⚠ Q44			2SB764(E,F)	TRANSISTOR		
⚠ Q45			2SC3940A(R,S)	TRANSISTOR		
Q46			2SC2458(Y,GR)	TRANSISTOR		
Q46			2SC3311A(Q,R)	TRANSISTOR		
⚠ Q47			2SB764(E,F)	TRANSISTOR		
⚠ Q48			2SD2012	TRANSISTOR		
⚠ Q48			2SD2061	TRANSISTOR		
Q49 ,50			2SC2458(Y,GR)	TRANSISTOR		
Q49 ,50			2SC3311A(Q,R)	TRANSISTOR		
⚠ Q51			2SC3940A(R,S)	TRANSISTOR		
Q52			2SA1048(Y,GR)	TRANSISTOR		
Q52			2SA1309A(Q,R)	TRANSISTOR		
Q53			2SD1302(S,T)	TRANSISTOR		
Q54 ,55			2SC2458(Y,GR)	TRANSISTOR		
Q54 ,55			2SC3311A(Q,R)	TRANSISTOR		
Q56			2SA992(F,E)	TRANSISTOR		
Q57			2SC2458(Y,GR)	TRANSISTOR		
Q57			2SC3311A(Q,R)	TRANSISTOR		
⚠ Q58			2SD2012	TRANSISTOR		

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⚠	Q58			2SD2061	TRANSISTOR		
	Q81			2SA1561(Q,R)	TRANSISTOR		
	Q82 ,83			2SC2458(Y,GR)	TRANSISTOR		
	Q82 ,83			2SC3311A(Q,R)	TRANSISTOR		

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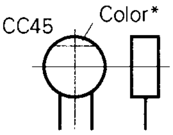
CAPACITORS

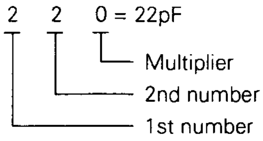
CC 45 TH 1H 220 J
1 2 3 4 5 6

1 = Type ... ceramic, electrolytic, etc.
2 = Shape ... round, square, ect.
3 = Temp. coefficient
4 = Voltage rating
5 = Value
6 = Tolerance



• Capacitor value

010 = 1pF
100 = 10pF
101 = 100pF
102 = 1000pF = 0.001μF
103 = 0.01μF



• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40	+80	+100	More than 10μF - 10 ~ +50
							-20	-20	-0	Less than 4.7μF -10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

2nd word 1st word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J
1 2 3 4 5 6 7
(Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z
1 2 3 4 5 6 7
(Chip) (B, F)

Refer to the table above.

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

Dimension (Chip capacitors)

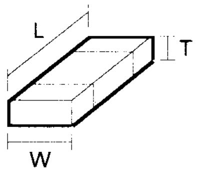
Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

RESISTORS

• Chip resistor (Carbon)

(EX) R K 7 3 E B 2 B 0 0 0 J
1 2 3 4 5 6 7
(Chip) (B,F)

Dimension



• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J
1 2 3 4 5 6 7

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Rating wattage
6 = Value
7 = Tolerance

Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6±0.2	0.8±0.2	0.5±0.1

Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

SPECIFICATIONS

Power amplifier section

Rated power output

STEREO MODE

65 watts per channel minimum RMS, both channels driven, at 6Ω from 40Hz to 15kHz with no more than 0.08% total harmonic distortion.
(For U.S.A. and Canada)

...........70W+70W (DIN, 6Ω) (For U.K. and Europe)
............80W+80W (EIAJ, 6Ω) (For other countries)

SURROUND MODE

FRONT	70W+70W (1kHz, 6Ω)
CENTER	10W (1kHz, 8Ω)
REAR	Total 6W (1kHz, 8Ω)
	(For U.S.A. and Canada)
FRONT	70W+70W (DIN, 6Ω)
CENTER	10W (DIN, 8Ω)
REAR	3W+3W (DIN, 8Ω)
	(For U.K. and Europe)
FRONT	75W+75W (EIAJ, 6Ω)
CENTER	10W (EIAJ, 8Ω)
REAR	Total 6W (EIAJ, 8Ω)
	(For other countries)

Total harmonic distortion	0.02% (1kHz, 1/2 Rated power, 6Ω)
Frequency response	20Hz~70kHz, +0dB, –1.0dB
Signal to noise ratio	105dB (IHF'66)
Input sensitivity/Impedance	1.0V/47kΩ
Output level/Impedance	
SUPER WOOFER PRE OUT	2.0V/600Ω
OMNI PRE OUT	2.2V/600Ω

Graphic equalizer section

Individual channel	63Hz, 160Hz, 400Hz, 1kHz, 2.5kHz, 6.3kHz, 16kHz
Equalizer characteristic variable range	±10dB

General

Power consumption	2.2A (For U.S.A. and Canada)
	200W (For U.K., Europe and other countries)
Dimensions	W : 270mm (10-5/8")
	H : 124mm (4-7/8")
	D : 320mm (12-5/8")
Weight (net)	6.5kg (14.3lb)

Note : KENWOOD follows a policy of continuous advancements in development. For this reason specifications may by changed without notice.

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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